

The MINING CONGRESS JOURNAL

In This Issue

Industrial America and the NRA

The Present Gold Situation

Italy's "New Deal" for Labor

Mechanical Loading in Indiana

Power Plants at the Mine

Safety Activities of the Tennessee Copper Co.

The Thirty Hour Week and the Mining Industry

Wheels of Government

Contributors

*Henry I. Harriman, Charles H. Segerstrom, Charles Will Wright,
P. L. Donie, F. N. Becker, H. T. Harper, Harry E. Tufft, L. S. Harner,
W. H. Forbes*

MARCH

1934



"Seven—Eleven"

And no Chance to Lose—

BECAUSE "Seven-Eleven" represents the dates of the Coal Convention and Exposition—five winning days for every coal operator who attends this meeting. It is the outstanding opportunity of the year to get, see and hear the latest information on efficient, cost reducing, modern production methods and practices being utilized by fellow operators.

An extensive program of practical operating papers and discussions is about complete. It covers all phases of mining. The exhibit of machinery and supplies promises to be the largest and most interesting in the history of the Exposition. Manufacturers have taken more space than ever before to demonstrate how they can cooperate in meeting production problems.

No coal operator wanting to be well informed on production trends can afford to miss this convention. Arrange now to reserve May 7-11 for your attendance at this major event for the coal industry. Any company will find it a profitable investment to play the dates "7-11" to the limit, by arranging for as many of its operating personnel as is possible to attend. Railroad reduced fares are now available upon request.

The program includes—
21 papers on MECHANIZATION
12 papers on SAFETY
16 papers on CLEANING
5 papers on POWER
2 papers on DRILLING
4 papers on BLASTING
4 papers on HAULAGE
2 papers on VENTILATION

And in addition 13 papers on various topics including FUEL UTILIZATION; THE COMPANY OWNED TOWN; MINE SEALING; TIMBER PRESERVATION; STRIPPING PROBLEMS and NEW DEVELOPMENTS.

Sponsored by

COAL DIVISION

The American Mining Congress

439 Munsey Building

Washington, D. C.

C I N C I N N A T I

Use Genuine



LINK-BELT CHAINS

FOR CONVEYING and POWER TRANSMISSION



THERE is a correct chain for every conveying, elevating, and power transmission service. As the pioneer manufacturers of chains of this kind, we have developed a type to meet every requirement. Our experienced engineers are prepared to give you unbiased advice on all chain, conveyor, and power transmitting applications. Whether your requirements are small or large—make use of our complete facilities and experience. Send for catalogs.

LINK-BELT COMPANY

Leading Manufacturers of Equipment for Handling
Materials Mechanically and Transmitting Power Positively
INDIANAPOLIS - CHICAGO - PHILADELPHIA
SAN FRANCISCO - TORONTO

Offices in Principal Cities

4914



The MINING CONGRESS JOURNAL

MARCH
1934



NUMBER 3
VOLUME 20

THE REDISTRIBUTION OF WEALTH.....	6
EDITORIALS	7
INDUSTRIAL AMERICA and the NRA..... <i>by Henry I. Harriman</i>	9
THE PRESENT GOLD SITUATION	12
<i>by Charles H. Segerstrom</i>	
ITALY'S "NEW DEAL" FOR LABOR..... <i>by Charles Will Wright</i>	14
ELEVENTH ANNUAL CONVENTION.....	17
THE WHEELS OF GOVERNMENT.....	20
MECHANICAL LOADING IN INDIANA..... <i>by P. L. Donie</i>	22
POWER PLANTS AT THE MINE..... <i>by F. N. Becker</i>	23
SAFETY ACTIVITIES OF TENNESSEE COPPER COMPANY, COPPERHILL, TENNESSEE	25
<i>by H. T. Harper</i>	
KEEPING RECORDS TO FIND WHERE TREATED TIMBER SHOULD BE USED	27
<i>by Harry E. Tufft</i>	
MILLING METHODS AND COSTS AT THE GOLDEN CYCLE MILL, COLO- RADO SPRINGS, COLO..... <i>by L. S. Harner</i>	29
TWO YEARS OF HOLMES SAFETY ASSOCIATION WORK IN IOWA..... <i>by W. H. Forbes</i>	32
THE THIRTY-HOUR WEEK and the MINING INDUSTRY.....	34
MINING EVENTS	36
HAVE YOU HEARD	42
PERSONALS	43
NEWS OF MANUFACTURERS.....	44

E. R. COOMBS
Editor

G. B. SOUTHWARD
Associate Editor

FRANK W. MORAN
Field Representative

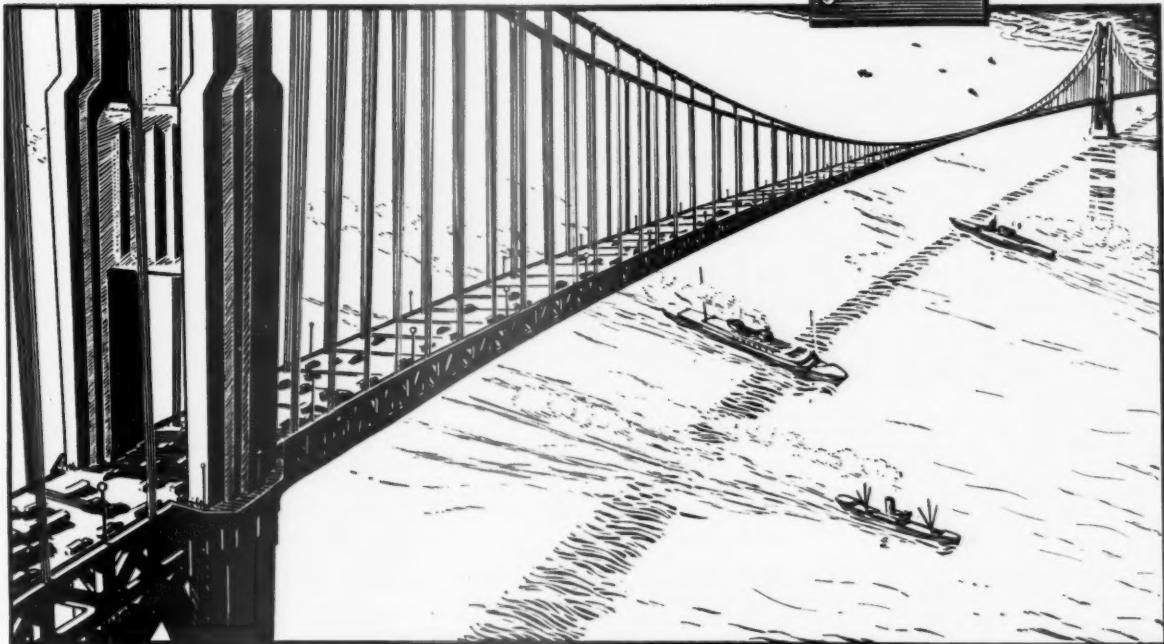
*The MINING CONGRESS JOURNAL has subscribed to the Code
of Fair Practices for the Periodical Publishing Industry, which has been
submitted to the President by the Periodical Publishers' Institute.*

Published every month by The American Mining Congress, Washington, D. C. Edited under the supervision of James F. Callbreath, Secretary of The American Mining Congress. Copyright 1933 by The American Mining Congress, Munsey Bldg., Washington, D. C. Entered as Second Class Mail Matter January 30, 1915, at the Post Office at Washington, D. C. Published 12 times annually—the first of each month. Yearly subscription, United States and Canada, \$3.00; Foreign, \$4.00; single copies, \$0.30.

80,000 MILES OF WIRE

in Golden Gate Bridge Cables

22,000 Ton Cables to be spun by Roebling
...of Roebling Open-hearth Steel Wire ...
famed for strength, toughness and stamina



Artist's conception of the great suspension bridge which will span San Francisco's renowned Golden Gate. Roebling will furnish main cables, suspenders, and cable accessories.

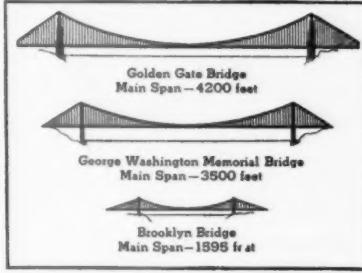
BRIDGE HISTORY is being made in San Francisco. A new king of suspension bridges...the Golden Gate...soon will be crowned. It will be the longest single clear span in the world.

Just try to picture this new ruler of the bridge world! Its main span will be almost three times the length of the main span of the famous Brooklyn Bridge. It will have the highest and largest bridge towers in the world.

80,000 miles of Roebling Wire will be used for the two main cables...enough wire to

girdle the globe three times. Each cable will be 36½ inches in diameter, weigh 11,000 tons, and contain 27,572 separate wires. Load supporting capacity of the two cables: 215,000 tons.

For over 90 years Roebling has been the pacemaker in the development of



wire rope and bridge cable. Full recognition of this fact is evidenced by the widespread use of these Roebling Products for every need from the largest to the smallest. They assure the highest obtainable degree of safe, dependable, economical service.

WIRE ROPE FOR ALL NEEDS...
LARGE OR SMALL: No matter how exacting the service, or how large or small the order may be, Roebling can meet your requirements. And your order will receive the same careful, prompt attention, whether for a carload of rope or merely a few feet. John A. Roebling's Sons Company, Trenton, N.J. Branches in Principal Cities.

ROEBLING
*The Pacemaker in Wire Rope
and Bridge Cable Development*

THE REDISTRIBUTION OF WEALTH

A RECENT EDITORIAL in the Wall Street Journal, under the above title, states that "a redistribution of wealth, in the sense of an imposed change in the ownership of what has been produced in the past, is both morally and practically out of the question, for these things have almost totally passed beyond the reach of social control."

If this statement applies to the concrete subject of ownership, it is probably correct but if it applies to the uses which can be made of such ownership it is subject to serious question.

The physical assets of the United States in 1929 were estimated by the National Industrial Conference Board to be Three Hundred Sixty-one Billions of Dollars. In 1932 that wealth had decreased to Two Hundred Forty-seven Billions of Dollars. If, as stated by the Wall Street Journal this wealth has "almost totally passed beyond the reach of social control," it becomes pertinent to ask, what sort of control caused or permitted this enormous reduction in the wealth of the nation? Without question the material value of these items was greater in 1932 than in 1929. The owner of a home then able to occupy it received the same benefits in one year as in the other but the earning value of all capital investment, the earning power of the nation, had been reduced enormously and that reduction was the result of social control. To say that the earnings of industry have not been properly distributed is only approximately correct. The earning power of the nation during any of the recent years has been based largely upon capital investments in productive enterprises. All wealth is the creation of labor. The product of labor with the use of capital investment is many times greater in our present-day civilization than ever before.

For instance, it is said that Fortress Monroe at St. Augustine, Florida, cost more than fifteen million dollars, although the labor was entirely performed by slaves. It is probably true that the same construction could be accomplished today with less than half of fifteen million dollars expenditure and still include a high wage for all those employed in this project. Labor is entitled to its share, first deducting a fair rate of interest upon the capital employed and a fair charge for the management which organized labor's effort and through such proper coordination accomplishes the final result. The redistribution of present wealth can only be accomplished by "social control."

At this time a more comprehensive effort is being made through that great social control agency, the Government, to properly distribute current earnings but in this proposal it is guaranteeing to capital a larger return than all of capital has ever before secured. Minimum wages are everywhere put in effect. Selling at less than cost is to be considered an unfair practice and therefore prohibited. A raising of the commodity price level to the 1926 level must carry with it a return of wealth to those who made loans in 1926 based upon 1926 property values who otherwise now face a loss because the mortgage loan equals the total present selling value of the property. Social control undertakes to redistribute this wealth as between debtor and creditor upon the basis of the 1926 estimate. The result of these efforts frankly admitted by their authors to be experiments are being watched with great concern by the conservatives who still believe that the law of supply and demand must in the end control and that any effort on the part of Government to do else than regulate the measure of value must result only in confusion.



The MINING CONGRESS JOURNAL



VOLUME 20
NUMBER 3

MARCH
1934

A Journal for the entire mining industry published by The American Mining Congress

WHO PAYS THE PIPER?

WHEN Mr. Roosevelt took office a year ago, the whole country was anxious to get behind any program he might advance which gave promise of leading us out of our slough of despondency. A year has passed and, while not everybody, industry at least is taking inventory. It has traveled far with the President and for the most part has been anxious to give the "New Deal" a fair chance.

But what have we?

The National Industrial Recovery Act. Approved generally, even if criticized extensively. Its basic principles have stood the test, and revision would indicate its successful application.

A potential labor monopoly through Section 7 (a) of that Act, to be further strengthened if Senator Wagner has his way.

A threat against mineral industries through bargaining tariffs which may destroy many worthy and essential industries in the interest of exportation of surpluses of other industries.

An increase in the price of gold and silver.

A Revenue Bill designed to get the maximum from industry for government expenditures.

A tremendous experiment in government-operated power projects, through the Tennessee Valley Authority, with the ultimate aim of a government-owned national power system, putting out of existence great industries and eliminating large investments in private power enterprises.

A Bureau of Mines relegated to the sub-cellars of unimportance; its appropriations cut to the very bone; its activities housed in out-of-the-way buildings, and under orders to move again upon a day's notice.

Is the mining industry satisfied? Is it willing to be made the goat for agriculture? Will it sit idly and permit its great strength to be bound in chains? The mining industry can and probably will answer those questions effectively.

THE THIRTY-HOUR WEEK

THE House Labor Committee has been conducting hearings and taking testimony of industry on the feasibility and practicability of the compulsory universal adoption of the 30-hour week for industry.

Throughout industry for months there has obtained a fatalistic attitude. "Whatever we do, we will get the 30-hour week, whether we want it, or not," or "Such a fool piece of legislation cannot pass Congress," or "Industry would welcome the chance to work 30 hours a week."

Apparently all the guessing is for naught, for it is apparent that industry will have something to say about the matter and that it will have powerful governmental agencies on its side against the proposal. Equally, there is a serious possibility that Congress will pass legislation of this sort;

and with the increasing volume of business, industry already is able to work more than 30 hours a week.

The question seems to be: "How shall we have our medicine?" Shall we take it without salt as a straight out-and-out compulsory law? Shall we take it with sugar as a part of NRA's Codes? Or shall we forestall legislation by a universal application?

The answer nearest the possibilities is that we shall have a law, but that in deference to industry's strenuous fight it will contain flexibility, with a maximum of a 36-hour week. It is said that union labor, riding high-wide-and-handsome, is willing to accept the compromise. So, Mr. Mining Industry, unless you are willing to oppose this program, tighten up your belt, set your heels, and prepare to embrace (1) a higher wage scale; (2) a shorter working week; (3) unionization of your property; and (4) supervision of your profits (if and when) by government.

MINING AND AGRICULTURE

WHILE WE ARE on the subject, it may serve some good purpose to present the amazing figures recently compiled as to just one phase of Agriculture and Mining—that of appropriations for each by the Federal Government and the amount of taxes paid by each. The following table needs no explanation:

Bur. of Mines	Appropriations		Taxes Paid	
	Agriculture	Mng. Indus.	Agri. Indus.	Agri. Indus.
1924	\$1,784,959	\$69,536,653	\$145,449,168	\$26,979,156
1925	2,028,268	58,575,274	152,870,292	32,257,329
1926	1,875,010	124,774,441	161,136,456	35,152,152
1927	1,914,400	127,924,573	123,719,517	34,728,738
1928	3,025,150	128,511,739	116,888,591	32,233,030

THE LABOR DISPUTES ACT

IN HIS PROPOSAL for congressional clarification of the famous Section 7 (a) of NRA, Senator Wagner has touched squarely upon one of the sorest spots in the industrial recovery program. His recently introduced bill is drawn with deliberate intent to eliminate the company union and to force all collective bargaining through the national labor unions.

Labor was granted tremendous powers through the passage of the National Industrial Recovery Act. Since its passage, determined effort has been made to unionize the industries of the country. This caused such protest and dispute that the National Labor Board was formed. Senator Wagner is the father of NRA; he is Chairman of the Labor Board; and is now sponsoring compulsory union recognition through the proposed "Labor Disputes Act." Under Section 7 (a) the American Federation of Labor has waxed opulent. Its membership has been increased by leaps and bounds. Secretary Green recently stated the avowed purpose of the Federation is to "leave no room in the United States for any other labor

movement." Even this great growth has not satisfied the ambition of the Federation. It desires a labor monopoly. It seeks to create—for labor—the very thing it has fought so violently during the years. It seeks through the Wagner Labor Disputes Act to compel every worker in the United States to become a member of the Federation; to compel every employer to submit to industrial control and forfeit his right to deal with his own employees. He must pay the wages, work the hours set out by the Federation or go out of business.

Can recovery be brought about by such a procedure? Will industry submit to union dictatorship? As for the mining industry: The United Mine Workers of America have made tremendous strides under Section 7 (a) insofar as the coal fields are concerned. The old IWW organization of the West is rearing its head formidably throughout the metal states under the new name of "Progressive Miners."

The bill ties the hands of workers, as well as employers. Workers must accept the domination of the craft unions or not work. The millions of workers not now affiliated with any labor union must eventually join or remain idle. This tremendous political power, growing mushroomlike, menaces the very foundation of Free-America. A labor monopoly, backed by government edict and giving to one giant amalgamation of craft unions (the American Federation of Labor) a vested right to speak for 40 million workers, whether or not those workers believe in its representation, is a serious thing. We seem to be following in the footsteps of Britain and Germany without profiting by their experience.

BARGAINING TARIFFS

HERE has been some uncertainty in the minds of industry as to just how far the President would go when it came to revision of tariffs. After his message to Congress on March 2, little of speculation remains. He asks authority to vary tariff rates in the negotiation of reciprocal trade treaties and intimates that there are industries in this country lacking proper economic base for continued existence. The authority is requested for a 3-year period and the bill (immediately introduced) provides for a 50 per cent variance in existing tariffs and that no commodities will be added to or taken from the free list.

Again we ask: What industries are to be sacrificed?

The mining industry in many of its units is utterly dependent upon protection for its existence. Among the base industries now protected are lead, zinc, tungsten, quicksilver, potash. Potash, for instance, is one of our youngest industries and already is faced with the Russian menace for its market. The government has appropriated \$500,000 for potash exploration and since 1926 has been developing an industry. In 1933 and 1934 the royalties and taxes paid into the federal treasury for this industry will return this appropriation. Are we to permit foreign producers to wreck this highly strategic industry?

Certainly in involving the products of the mining industry in bargaining tariffs, the President must give consideration to national-emergency-industries and not forget the peasant and coolie labor which is the competition of these industries. Unless a lot of common sense is utilized mine products are in jeopardy of sacrifice to the greedy agricultural group. It is high time that mining men made themselves heard, felt, and seen.

WILL LABOR ACCEPT ITS RESPONSIBILITY?

THE United States has a population of 120 millions and bountiful natural resources. Italy has 42 millions and meager natural resources. We, as a people, especially we who are pointedly interested in the management and

success of industrial enterprise, are just beginning to see the light in the development of our National Industrial Recovery Act and its administration. Quite as is our custom and habit of thought, we feel that again this nation has pioneered for the world, and we look forward with a considerable measure of trepidation to what course labor will take when given a responsible part in the industrial scheme. The article, "Italy's 'New Deal' for Labor," appearing elsewhere in this issue and written by a manager who was on the ground and knows the people of that land, is most pertinent in our present stage. None but "legally recognized unions" have the right to represent the workers for which they are constituted. Management and workmen have risen to their share in the responsibilities involved and unemployment has been beaten down to a figure which in the United States would correspond to 2,520,000.

THE REEDSVILLE EXPERIMENT

IN THIS DAY of experiment, one of the most useless is that known as the "Reedsville Experiment," which has for its purpose the improvement of the coal miner. Estimates vary, but there probably are a hundred thousand unemployed miners in the mountains of West Virginia, Virginia, Kentucky and Tennessee. Their standard of living, in common with unemployed everywhere, has been greatly reduced—in some instances as low as that of the East Side of New York City. Any program to improve their condition is to be approved, but it should be based upon fact, not theory or sentiment.

Several plans have been advanced. The best known is that of the establishment of a furniture factory to make furniture, brooms and wicker baskets. Another is to establish these people on small farms. The furniture factory has no real merit because of its limitation in employment to a comparatively small number of the thousands of families involved. Congress promptly turned down the suggestion that it appropriate funds to establish in this district a government-owned furniture factory which would be in competition with private business. The farm project sounds good but its practicability is questionable. The mountain soil is not suited to farming and never has been. The people of this region for generations have been obliged to depend upon some other means of maintenance. A decade ago it was work in the coal mines; a generation before that it was wages from the lumber camps; and back of that, hunting and fishing.

All of these remain and again will furnish sustenance to the citizens of this region. The point is that all of the destitute are not native to the region. A large proportion have come in from other states, attracted by the relatively high wages of the coal miner. The real problem is to transport this surplus citizenry to other vacant land in the United States where the soil is productive, where they will have a chance to become self-respecting citizens, not wards of the government.

These miners have been held up as an example of the fearful destitution of coal mining regions. It is bad enough but no worse than the condition of the unemployed in thousands of districts wholly unrelated to coal.

SOME of the most effective testimony against changes in hour and wage provisions of codes was presented by officials attached to the Recovery Administration in some capacity.

All emphasized the point that the major problem facing the Administration was stimulation of the capital goods industries and that unemployment could not be relieved or business activity increased merely by further spreading of work or raising wages.



Industrial America and the NRA[†]

NOT long ago a mountaineer from West Virginia is said to have remarked after he had been out to see one of the forest camps, that he had come to the conclusion that the previous administration made monkeys out of us and that the present administration was planting trees for us to climb. I don't quote that with approval; I quote it because it expresses an all too prevalent method of dealing with the great problems that are before us.

Not long ago I received a letter commenting upon my beliefs in the NRA, and it wound up by saying: "Your position is that of a redolent red radical." The next day I received another letter from another man dealing with another subject and he said: "Your views are those of a tough, tenacious Tory."

Now, we are never going to settle the problems of this great country by calling each other names; we are going to settle them only by the fair, definite consideration of the fundamentals involved.

I don't need to repeat to you the details of the economic situation in which we were nine months or a year ago; they were extremely serious. I am one of those who believe that if matters had drifted as they were then drifting, the conditions would have been extremely serious, and that it was necessary to take more drastic action for governmental control than any of us would like under normal conditions.

The program which was presented by the President consisted of twelve to fourteen distinct measures. Some of them were for the stabilization of the credit of the United States and the

By HENRY I. HARRIMAN*

establishing of the soundness of our banks; others were to protect property from bankruptcy; others were to give immediate succor and aid to those who were out of work and who must have more sustenance than could be given to them by voluntary charity.

But the three important measures, as I see it, were the National Industrial Recovery Act, the Agricultural Adjustment Act, and more lately and as a part of the last act, the monetary policy of the country. In the brief time that has been allotted to me, I can but touch upon these points.

The fundamental theory of the National Industrial Recovery Act is that the members of a given industry should unite themselves in a trade organization, should then present a code to the President in which they outline fair business policies, which includes wages and hours and the abolition of bad practices which had been prevalent in the past, and if they are approved by the President or his Administrator, then they have the force of law and are enforceable on all.

The fundamental point of the National Recovery Act is that it modifies the Sherman Act and permits business to

agree among itself with the consent of the President upon sound business policies. Forty years ago when the Sherman Act was passed it was felt that if competition could be absolutely open and free of any restraint, that would be the solution of our problems, but as mass production came in it was perfectly evident that we were suffering from a maladjustment between consumption and production. I am not using the word "over-production" or "under-consumption." It was a maladjustment. All of us would like to have more things than we do have; we would like to have the ability to buy more things, and thereby to prevent the over-production, but we all know that such adjustments are matters of time and can only be worked out with deliberation over a substantial period of months or even years.

Thus far the chief industries of the country have been codified, I believe about 170 or 180 codes actually have been signed by the President, and they cover such important industries as textiles, coal, steel, automobiles, lumber, cement, and many other basic lines of effort. In general they have established a somewhat shorter week and a somewhat higher minimum pay than we had before, but in addition to that they have abolished many bad business practices. In general, the codes provide for 40 hours of work a week and from 30 to 50 cents minimum pay.

I think it is time to appraise the situation and to see how these codes are working. We find, in the first place, that partially as the result of these codes and partially as the result of a better psychology, and partially as the result of the farm act, there are four million more men at work than there were on the 4th of March. There are still many who are out of work, but I am sure you

*President United States Chamber of Commerce.
†Delivered to 36th Annual Meeting of The American Mining Congress, December, 1933.

Note: This paper was prepared and delivered in 1933.

will agree with me that to have added four million to the rolls of the employed is a distinct and very advantageous feat.

Wages are higher. It is estimated that the monthly wage now being received is about \$600,000,000 more than it was in the month of February 1933. That is a large sum to have added to the pay rolls of the country.

But there are other ways in which the codes have worked. Take the Textile Code: There was a distinct sweat shop condition existing in many sections of the country in the textile industry. I myself saw checks of women who had worked for a week in mills of this country and had received from \$7 to \$8. That was due to the terrible competition, to the fact that our mills could turn out much more goods than we were able at that time to consume. Each man under-cut the other, with the result that there were only two or three mills in the whole country that had paid a dividend within the last two years, and those were working on specialties, and we saw this very desperate condition of labor. The code established a definite 40-cent minimum pay and a 40-hour week, and it provided that the machinery of the trade could not run more than 80 hours a week, that is, two 40-hour shifts. At that time the shelves were bare. It was felt that there were sufficient orders to run the mills of the country at two shifts. The prophecy was true, and for two or three months following the adoption of the code the mills ran full. Then it became apparent that business was slacking or that an oversupply had been created due to the long hours that the mills had been running. Now if we had not had a code we would have had the old theory of cut-throat competition come in. Some mills in order to keep their looms and spindles running would have made an extremely low bid for the cloth, they would probably have lost money, but they would have felt that they were losing less money than by shutting down their mills. This would have led other mills to go still further, and the cotton mill business would have been in a most serious condition.

What did they do? They came to Washington and asked that for two months the hours of running be changed from 80 to 60. That modification of the code was granted, and there are orders today for practically all of the mills of the country on this basis and fair prices are being maintained for the products of the mill. I give you this as an example. It has saved the cotton mill industry of the New England states. We had labor laws which prevented the running of the mills for more than 48 hours. In many cases we had proper minimum wage laws. In other states there were no such limitations and mills were running for small pay for 60 hours a week. Now those conditions are leveled out, the hours are absolutely even throughout the country, there is a differential in pay of approximately 10 per cent because an examination showed that the cost of living in

the South was approximately 10 per cent less than the cost of living in New England.

That means that competition in the cotton trade is being carried out on fair terms and that the most skillful man in the industry is winning, and that should be the basis of competition.

I could go on indefinitely discussing with you provisions of the codes. I will just mention one or two.

The whisky code contains a provision that no distiller of whisky can have any interest whatsoever in a retail distribution store that sells it. Now we all know that one of the greatest evils of the preprohibition days was the fact that the brewers and distillers had interests in the stores that sold their goods. We all know of the terrible havoc that has been wrought by the use of the machine gun by the racketeer. Before the code was adopted there was nothing to prevent any man from buying a machine gun. Today the only people that can buy machine guns are units of the Government, either of the Federal or the state or the local government, and while there are still machine guns in the hands of the racketeers and while they will probably obtain them in the future, it is going to be a very much more difficult task than it has been in the past and it would have taken years to have passed such legislation through our Federal Government and through our forty-eight states.

I have talked with men from one end of the continent to the other about the workings of the codes, and I find in general that those who are connected with the big industries, such as steel and automobiles and textiles, feel that the code is doing them much good. A large anthracite mine operator told me the other day that in his judgment the bituminous code meant the salvation of the mining industry of the country. I heard similar expressions from Mr. Taylor of the Steel Corporation and from Mr. Teagle of the Standard Oil Company.

You know that before the codes were adopted and before there was an allotment of oil to the various states and

to the various districts of the states, oil was selling as low as 10 cents a barrel in the East Texas District. This was a terrible natural waste. Now, thanks to the fact that there is a determination of the nation's demand from month to month and then allocation by states and by districts and finally down to the wells, oil is selling in many districts at about a dollar a barrel, and that is a fair price, I am told. It means that the cut-throat competition of the past is over in that line and that oil is being fairly divided up among the various producing units of the country.

I have recently flown from California to be at this meeting. While there I talked with the managers of the citrus trade. They had an oversupply of about 30 per cent in oranges and lemons, also in peaches and pears and nuts. (Of course, these are all not citrus fruits.) They told me that under the workings of the citrus code the cooperative trade units would, with the consent of the Government, determine from time to time what the real demand was, that demand would be allocated between the Florida group, the Texas group, and the California-Arizona group, then provision was made for making the best possible use of the surplus, to use it for by-products, for citric acid, and for other purposes, and to take it off the market, and it was the feeling of the managers of the citrus fruit industry with whom I talked that their problem had been very largely settled and that they were going to get a fair and living price for that article.

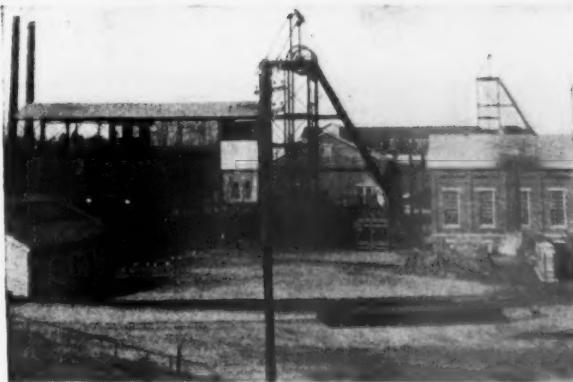
What I have said thus far is favorable to the codes and I think it fair to say that broadly speaking the National Industrial Recovery Act is the Magna Charta of industry, but it could not be expected that a great number of codes for the orderly conduct of the business of the country could be formulated without many mistakes being made, and I think those mistakes have been made, and I am sure it is General Johnson's intention to correct those mistakes as proof is presented of error. In fact, I look upon the present codes as but the starting point and that experience is going to show to the various code authorities what they should do to make the codes work better, both from the standpoint of industry, labor and the consumer.

I have spoken to you of a differential that has been made in the wage scale between the North and the South. I

think that with the passage of time it will be shown that probably the South is entitled to a slightly larger differential than it has. I also think that due attention has not been paid to the difference in the cost of a given standard of living in a small town and in the big city and that it should be. For instance, in the small town of 10,000 or 15,000 people the man walks to his work, in the city he pays a fare; that alone may be or probably is a dollar a week. He goes home to his lunch, his lunch costs him less than if he

Bunker Hill & Sullivan Mining & Concentrating Co.





Portion of Surface Plants, Mulga Shaft,
Coal Division, Woodward Iron Co.



Modern Steel Tipple and Compressor
Building, No. 3, Red Ore Mine

bought it at Childs' Restaurant or some other. His rent is less because in the small town, carpenters and bricklayers and plasterers have not received the same wages that they have in the big city, and so naturally houses can be rented at a lower rate. In many cases he has a small garden and raises part of his foodstuff.

I think these are distinct arguments for a consideration which has not yet been given to a differential that should be granted to the industry in the small city and in the big town. It is for scientific determination to find out how much that is.

Then I think the codes have been unduly oppressive on many small industries. There are many small industries employing 5, 10, 15 or 20 men; they are the backbone of our industrial life. I should be most sorry to see them wiped out. Yet we must admit that they have not been able to accumulate the surpluses which the large industry has accumulated and as wages have been raised and hours have been shortened they have not been able to raise their price simultaneously. They have not had the surplus to carry them over, and it has worked a real hardship on them. I believe that condition must be recognized, either by not applying codes to

certain very small industries or by definitely recognizing that the application of the code to a small industry should be spread over a number of months and give the industry an opportunity to adjust itself to the new conditions.

I have discussed with you, thus, both sides of the NRA, its good side and its bad side. In my opinion the good outweighs the bad; the mistakes that have been made are the natural and inevitable mistakes of an attempt to regiment and order business in an orderly way in a short time.

I think the time has come in the codes, in the Agricultural Act and the monetary policy frankly and fairly to discuss them and to point out where they have worked well and where they should be altered in order to work better. We have got to recognize that the old laissez faire doctrine which was good in the early days is not good today. We have got to recognize that one man's actions very seriously affect the well-being of other men.

The danger and the great danger that lies in the codes is in an excess of governmental control. American industry grew to its present splendid position by the exercise of individual initiative, by the fact that large rewards awaited the daring and adventurous and wise man who conducted a business better than his neighbor. We mustn't do away with

that initiative, we mustn't do away with the opportunities for profit for the man who really makes a material contribution to our civilization.

When I was in college, more years ago than I like to think, we had very few rules of football, and there were some pretty rough practices that were carried on. Today the game has been opened up, there aren't half as many accidents as there were when I played the game thirty years ago, but today the game of football is to me a more entrancing and enthralling game than it was when you could kick and bite and scratch and do almost anything else. I think that is absolutely applicable to business. We are setting down in these codes certain fair rules of practice, we mustn't go beyond those fair rules, however, and attempt to regiment business along certain lines and under the most stringent government regulation. I believe that that is the desire of the President and of General Johnson.

I have considered it a great privilege to come here and to discuss this problem of the NRA with you, to point out its many good features, to point out the fact that it has made mistakes, and to signify my belief that a year from now many, if not most, of these initial errors will have been corrected.

Chino Mine of Nevada Consolidated
Copper Company





THE PRESENT GOLD SITUATION

By CHARLES H. SEGERSTROM *

FROM the earliest recorded history gold has ever been a precious metal. We find gold mining scenes of great antiquity hewn on monuments erected in Egypt which probably date before 2900 B. C., and the familiar legend of the Golden Fleece described in great detail a gold expedition organized in 1200 B. C. The Phoenicians were mining gold approximately 1594 B. C., and the name Argonaut was given to gold seekers in 1263 B. C. And through all history gold has been the principal medium of exchange between the nations of the world in making settlement for goods purchased, or in payments of debt. Hence gold has always possessed the function of money, or a medium of exchange.

Gold in its function as money discharges two distinct offices:

First: It is a common measure of value.

Second: It is a universal instrument of exchange. The reason that gold has universally been selected by the nations of the world to serve for these dual purposes can be attributed to two circumstances—*physical properties of gold and its scarcity*. The combination of these two qualities render it almost uniquely suitable as a store for value and a medium of exchange. For besides its at-

tractive appearance, gold is malleable and ductile to a high degree. Gold also is not susceptible to corrosion, and its scarcity makes it practically immune from depreciation. Thus we can readily see why there has been a continuous utility of metallic gold money throughout the ages. At various times certain people of the world used other commodities as a measure of value or community money, such as beaver skins in our own Northwest, dried cod-fish, wampum cattle and other commodities. The objections to the employment of such articles as mediums of exchange is obvious. They are all perishable, and are not readily divisible into sufficient smaller parts that they might be transferred from hand to hand, hence the civilized nations, ancient and modern, have as it were, by common consent adopted gold as the fittest and most accurate measure of value of their commodities, and the best medium of exchange.

There are several other reasons why gold has been selected as the most accurate measure of value:

1. *Its greater uniformity of value.* The value of gold is not absolutely uniform, but it has been more uniform than any other commodity with which we are acquainted. We have witnessed changes in value of precious metals, and it now seems that we are destined to again witness a change, however, such occurrences are comparatively rare, and the great uniformity of value which characterizes gold still fits it to be used as the yard stick of trade.

2. *Uniformity of quality.* No other commodity is so perfectly homogeneous as gold. Other minerals vary in quality, but gold is exactly the same wherever found. The relative weight therefore of a specific portion of gold in its pure state can be determined quickly both as to its quantity, and its value, and this quality fits it most eminently as a measure of value.

3. *Its divisibility.* Gold in malleability and ductility exceeds all other metals. It may be beaten into leaves $1/282,000$ of an inch in thickness. And a single grain may be drawn into 500 feet of wire. Gold being thus divisible into minute portions, and being capable of again being united without any loss, is well fitted for the purpose of money, as the quantity of the metal can be so exactly apportioned to the commodity to be exchanged.

* President, Carson Hill Gold Mining Corp.

4. *Easy means of transportation.* In gold we can unite great value into small bulk, so that the medium of exchange can be readily transferred between person and person, or nation and nation, with very little inconvenience.

5. *And the last distinguishing quality about gold* is that it cannot easily be counterfeited. It is capable of being coined into money, and retains an impression so that a nation can affix their stamp as a public voucher of the weight and fineness of any coin. And it thus becomes easy to divide again into larger or smaller coins, or to melt the bullion into bars of certain fineness.

Thus nations of the world have accurately evolved a gold standard. It, together with the development of international exchange has facilitated the production and exchange of world commodities in such a manner that the nations of the world have an accurate yard stick for international credit settlements. In these days when we hear so much talk of a "commodity" dollar it is well to think of the *price of gold as a commodity*, and while the metal forms a *standard of money*, gold like everything else rises and falls in value. Its value, however, is not expressed in *money*. But in *commodities*. If we, therefore, think of gold as commodity, that rises and falls in value like other things, but it, however, has its value expressed not in *money*, but in other products—rising in value as other commodities fall in price, and falling in value as all other commodities rise in price. Therefore, a general falling in the value of money, is just another expression for a general rise in the price of other commodities. The value of gold, however, in relation to commodities in any particular country, although liable to be influenced and disturbed by a change in the relative quantities of money in circulation and commodities, is governed mainly in its permanent value in the markets of the world, and this value is governed exclusively by its *cost of production*. The *supply and demand* for gold may from time to time be greater or less. And its relative value may be temporarily affected. However, the *cost of production* is the permanent factor of its value. And the doctrine of Adam Smith that a rise or fall in the money price of goods proceeding entirely from a change in the value of precious metals "must affect the goods equally, and rise or lower their prices universally," is not inconsistent with the inequities we are now witnessing. We have for many years witnessed a decrease in the supply of gold and an increase in its cost of production, and with all commodities remaining as formerly, it can readily be seen that the value of gold has been raised, and the value of commodities has been diminished. The decrease in the price of some commodities is greater than others. And the reason for this is that while the true variations in the value of gold must affect all commodities equally and raise or lower their price universally, however, in order to do this it is necessary that the value of commodities in relation to each other remain the same. Therefore, practically a fall in the value of gold, while raising the price of all commodities, the cost of production of each commodity governs the changes in the price, and thus commodities may be raised in greater or less proportion, as its relation to other commodities and cost of production are applicable. Adam Smith states that "*labor is the*

foundation value of all commodities." And while this is undoubtedly true, it also makes labor the foundation of relative value of gold and other commodities, and as a result the value of gold is increased or diminished as its cost of production increases or decreases. So that at times a smaller quantity of gold will buy a larger portion of commodities, and increase its purchasing power due to the higher cost of production. And in whatever degree the quantity of gold is increased or decreased, other things remaining the same, in the same proportion the value of all commodities is diminished or increased. Since the value of gold really conforms like all other things, although much more slightly, to its *cost of production*, some political economists have objected altogether to the statement that the value of gold bears the same relation to other commodities as does any single commodity. And it is simply a question of supply and demand, as in the case of all commodities, the cost of production causes the rise or fall in the value of gold, and causing it to flow from nation to nation until it finds its level. However, I wish to emphasize that this level is the *cost of production*, and every nation that employs gold either elevates or depresses the value of gold as its *cost of production* increases or decreases.

President Roosevelt has recently stated that the United States of America seeks the kind of dollar which a generation hence will have the same purchasing and debt-paying power as the dollar value we hope to obtain in the near future. We would naturally presume that this dollar would not have a constant weight with a variable purchasing power, but would have a variable weight in gold and a more or less constant purchasing power in commodities. His proposal would allow the weight and not the value of the dollar to vary. Under such a system there would no longer be any necessity for the coinage of gold. The Government would keep its supply of gold in bars, and the actual currency in circulation would be the same as at the present time. That is paper dollars of currency and small silver coin. The currency would be exchangeable for gold on demand as under our former gold standard, but the number of grains of gold that could be exchanged for a dollar would vary with the price level. It is proposed that such a dollar would prevent a serious deflation or fall in commodity prices in a nation when there is an unfavorable trade balance, and would provide a medium whereby one would borrow with a definite knowledge that re-payment would be made in the same

purchasing power. They also claim that prices are determined not by two factors, but by four factors—the supply and demand of the commodity, and the supply and demand for money or gold. Thus if gold is to be the basis of our currency, then the supply and demand for gold for money enters into prices. And if the price of gold is so fixed that 23.22 grains of gold are worth one dollar, then the price of all commodities must vary in price according to the quantity of gold on hand. It is very difficult to show the relationship between the supply of gold and the demand for gold and commodity prices. Such figures must show the relative amount of gold which goes into the arts, in order to establish the ratio between the amount of gold available for monetary purposes, and not for such gold as shown by the *cost of production*. The figures, ratios and calculations are very complex. However, they make a good case for argument. "That is, when the world monetary stock of gold increases at the same rate as the world physical volume of production of business, during such periods the *prices remain stable*." However, if the stock of gold increases more rapidly than other things, then prices rise. If, however, they increase less rapidly, then prices fall.

The official records show that the world has produced about 22 billion dollars worth of gold since Columbus' discovery in 1492. Of this, 80 percent has been produced since 1860. However, a careful survey of the world monetary gold stock shows that the present amount is about \$12,000,000,000. It can be thus easily seen that nearly one-half of the gold produced in the world has been used in the arts or lost for monetary purposes.

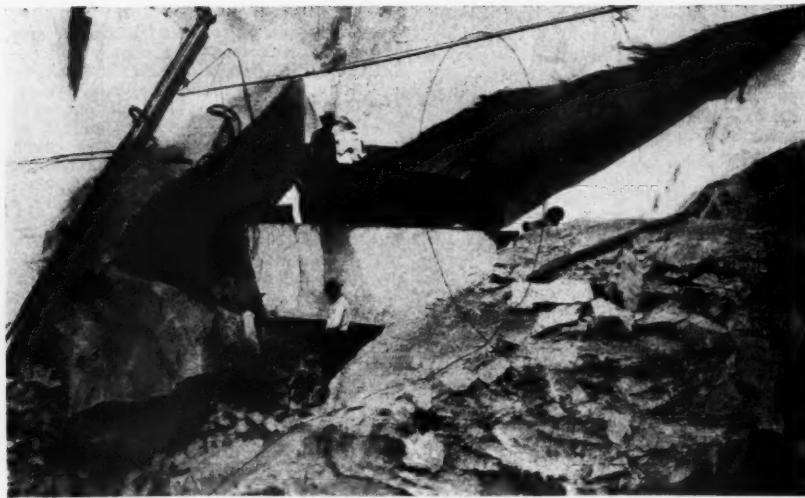
We may regard the gold standard today as a more or less discredited institution, as nearly all the leading nations of the world have definitely abandoned payment in gold. And other countries which remain nominally on the gold standard, have hampered their operations so seriously—exchange restrictions and other forms of control—that for practical purposes the gold standard of the world must be regarded as suspended.

The gold standard is a device for maintaining the exchange stability in international transactions, and is so controlled that the money of one country may be freely converted into gold at a fixed rate, and hence, this fixed rate can then be exchanged for money of some other gold country, and the discount will be very small. And as long as the gold standard remains in force, business may cross international frontiers, and not

taking into account any risk of international fluctuations, and capital can then flow into international transactions without any fear that they may be suddenly destroyed by a movement in the foreign exchange market. That this is a benefit to trade and industry is conceded by everyone without a question. However, a real benefit can only be obtained if the movement of gold is not counter balanced by monetary manipulation and other obstacles. Gold is moved between nations because it is more profitable to move gold than other goods, services or securities, and if the movement of gold is allowed to operate freely, it tends to bring about a balance between the payments of imports and exports. If however, as has been the case in recent

(Concluded on page 41)





A block of Carrara Marble Quarried Out from Lower Part of Vein with Wire Saw

ITALY'S "NEW DEAL" FOR LABOR

By CHARLES WILL WRIGHT *

Italy's solution of the labor problem has been an outstanding success and we are pleased to publish this paper, written by a mining engineer who operated mines in Italy, both under communism and organized unions. The author believes that certain measures applied in Italy may be advantageously applied in America. The main issue is the settlement of differences between labor and industry through labor courts rather than by strikes. This system is said to create a better understanding between the workmen and management which is necessary for industrial success. Labor can make or break an industry and labor should realize more that their welfare depends upon the profits of industry.—THE EDITOR.

FOURTEEN years ago Italy was governed by three principal political parties whose representatives in parliament played the political game for their constituents and personal gain, while the nation paid the bills and went into debt. It was a weak inefficient government and the people feared that it would result in a communistic state, an apprehension caused by widespread strikes among industrial workers and the attitude of the labor leaders.

I was operating mines in Italy during this period of unrest when communists attempted to hold up the nation by instigating strikes on the railroads, at the power plants, and by occupying the industrial plants. But when the industrial crisis developed in 1921, the workers' chief concern was to hold their jobs, rather than to continue their attempt to obtain control of industry, and they lost much that they had gained during the two preceding years. The agitation subsided and the large reduction in working forces due to the depression served to eliminate many disturbing and radical elements in business, but in its place unemployment loomed up and with it the fear of complete chaos, mob rule and violence. Strikes and lockouts, dissatisfaction among the laborers and ex-soldiers, uprisings of the students, doleful shaking of heads among the educated classes were the mode, but nothing was done by the state to better conditions. Things were getting worse and worse when at last Fascism took the helm. From a small group of patriotic men, the movement had grown until 1922, when, with Mussolini at their head, 200,000 ardent Fascisti marched on Rome, and, not long after, the Nationalist Party merged with the Fascist, thus further increasing its size.

Fortunately we have had no such tense conditions here, and let us hope that labor will soon fall in line as there is the same opportunity under Roosevelt for our people to develop a nationalistic spirit in the true sense of cooperating for the country's welfare that there was in Italy.

Fascism has the credit of having dealt with the question of the relations between capital and labor as it dealt with all other questions, not by violence, but by legislative reform. The Fascist state demands the cooperation of all classes and sections participating in production for the welfare of the whole nation.

* U. S. Bureau of Mines.

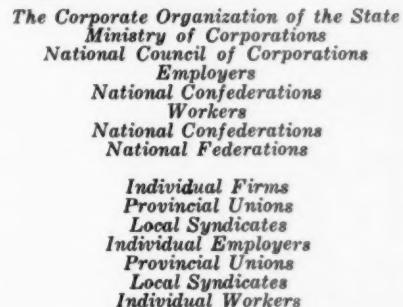
Force would not do any permanent good; in order that there should be an enduring volition for, and spirit of, cooperation the Italians needed to be shown its value. The daily needs of the people had to be provided for efficiently; to do this was the first great responsibility of Fascism. A vast work of organization had to be started at once, with a comprehensive plan that dominated all others. There could be no quibbling or questioning if that plan were to succeed, if Italy were to be saved from utter chaos and revolution. To accomplish this all power had to be centralized and concentrated in one person. Mussolini had the courage to undertake the task and at once set about encouraging and helping the people to cooperate.

The Fascist principles are very similar to those which we have been evolving here in America and many of which are being expressed and put into practice by the present Administration under the National Industrial Recovery Act. We should therefore not condemn this act but be tolerant and patient until the basic ideals expressed in it can be worked out in practice.

The fundamental economic changes which have brought about present results under Mussolini's administration have often been obscured to the outsider by political events of minor importance, and we must be careful in America not to let minor events hide or distort the significance of the fundamental ideas of our economic organization.

ORGANIZATION

Each progressive step taken to build up the present organization of labor and industry in Italy is shown in the following diagram. These steps start at the bottom of the diagram with the organization of small syndicates for employers and workmen, followed by provincial unions and national confederations.



THE FIRST STEP

Beginning in 1922, all employers were obliged to make contracts with their workmen in which minimum wages and maximum hours were fixed. Local conditions governed the establishing of these agreements and later on of the codes between trade associations and labor unions. Employers in each industrial center chose a secretary to represent them, who received official recognition from Rome. Labor likewise appointed a secretary for the same areas and these secretaries were paid by the employer and by the workmen employed. All questions that arose among the employers and employees were brought to the attention of their respective secretaries, who arranged meetings at which they could discuss matters and work together for mutual agreement. Thus between 1922 and 1926 the majority of



Charles Will Wright

employers and employed were busily engaged in organizing trade associations or syndicates grouped in accordance with the industries involved and aiming to secure a just representation and effective protection of the various categories of persons engaged in production.

THE SECOND STEP

It took four years of experimenting and patient demonstrating by the government of the need for cooperation before the first visible step toward its achievement could be taken in the form of legislation. During this period the local syndicates of workers and employers were grouped into provincial unions which regulated relations between capital and labor, stipulated labor contracts, and decided questions concerning them. The individual firms were grouped into federations (rather than unions) of their own particular industry, whose task it was to represent the industry as a whole.

"... There is the same opportunity under Mr. Roosevelt for our people to develop a nationalistic spirit in the true sense of cooperating for the country's welfare that there was in Italy. . . ."

When the Law on Syndicates of April 3, 1926, and the Decree of July 1 of the same year were published, the field was already prepared for the practical application of the fundamental principles and regulations implicit in the law itself. The law, coming when it did, was a natural result of popular sentiment rather than an arbitrary measure imposed upon a nation before it was ready to accept it.

The basic ideas involved in its principles and rules are as follows: (1) the voluntary character of individual mem-

bership in the syndicate; (2) the legal recognition of any syndicate as soon as it could show a membership of 10 percent of the total number of the persons employed in the business represented, together with the right and duty of representing the whole category of employers and of employees in the calling for which the syndicate had been formed; (3) the express prohibition of strikes and lockouts and the compulsion of utilizing the Labor Courts for the solution of all disputes.

In the interest of the public it became necessary that the organization and internal constitution of the syndicates should be rendered capable of fulfilling adequately its responsibilities. These organizations were therefore called upon to establish, governing, administrative and controlling bodies detailed to bring their statutes and regulations into harmony with the terms of the new law.

The appointment of the members to these governing bodies was the result of a delicate work of selection and utilized the services of a number of competent persons.

ADDITIONAL FUNCTIONS

As well as having economic and material objectives, the syndicates undertook measures of an educational nature in order to promote the technical, moral and patriotic education of their members and to provide for social service, sickness and old age benefits, and they set aside a part of their revenue for these purposes. The members of the syndicates need not be Fascists, but they must offer guarantees of capacity, morality, and patriotism. One syndicate, and one only, could obtain legal recognition for each industry or occupational group in each district, and thus had the right to levy contributions (amounting to approximately one day's wage per annum from the worker in return for which he enjoyed its protection) and to negotiate labor contracts that bind not only members of the syndicate but every one in the group. By recognizing the syndicates the state abandoned the "laissez-faire" policy in regard to conflicts between capital and labor and assumed the responsibility of upholding justice and of maintaining harmony between the opposed interests of the productive classes. The syndicates are largely autonomous, but the law which gives them juridical recognition also gives the state full powers of supervision and the right to dissolve the syndical organizations in certain cases.

The state is morally obliged to provide a judge to settle conflicts when a satisfactory agreement cannot be reached through ordinary syndical bargaining. For this purpose a state magistrature has been created for the settlement of disputes between capital and labor. These labor courts consist of three magistrates of the Court of Appeals and of two experts in problems of production and labor chosen by the president of the court from a carefully selected list of eligible citizens. An appeal from the decisions of the labor courts may be made to the Supreme Court of the Kingdom. Since the law provides methods of conciliation through the regional or national federations of syndicates, appeal to which must always precede judicial action, the labor magistrates are called on in a relatively small number of cases. People said that it would be impossible to compel the classes concerned to obey the decisions of the

magistrates, but by proving to them that it was and is to their interest to do so success has been achieved and during recent years the labor magistrature has been fulfilling the purpose for which it was established. Italy has had no strikes in the last few years and huge sums have not, as in the past, been lost through stoppages of work and the closing of factories.

THE CHARTER OF LABOR

The year following the enactment of the Law on Syndicates a Charter of Labor was approved by the Fascist Grand Council (April, 1927). It is a "declaration of the duties and rights of labor" in the interest of the nation. The following are some of the more important paragraphs in the Charter which are indicative of the high character of this legislative document:

1. The Italian Nation is an organism which has ends, life and means of action superior in strength and durability to those of individuals, either divided or united in groups, which compose it. It is a moral, political and economic entity, which finds its complete expression in the Fascist State.

2. Work, in all its managerial, executive, intellectual, technical and manual forms, is a social duty. For this reason alone, it is protected by the state. Production, considered as a whole, is unitary from a national point of view; its objectives may be summed up in the well-being of the individual and the development of the power of the nation.

3. Full freedom of syndical and professional organization exists; but only legally recognized syndicates (unions), which are subject to the supervision of the state, have the right legally to represent the categories of employers and of workers for which they are constituted.

7. The Corporative State considers private initiative in the field of production as the most efficacious and useful instrument in the interests of the nation. As private organization of production is a function of national interest, the organizers of any enterprise are responsible, in the eyes of the state, for the development of production. From the cooperation of productive forces it follows that a reciprocity of rights and duties exists between them. The helpers, technicians, employees and workers are active collaborators in any economic enterprise, the management of which belongs to the employer, who is responsible for it.

"... Italy has established, by law, the 48-hour week and the 8-hour day. Price-fixing has not been compulsory except for certain basic commodities, such as rice, but one of the main aims of the government has been to bring about voluntary agreements which provide for a living wage for all workers. Unemployment has been reduced to 884,560 for a population of 42,000,000—considering the meager natural resources that is a worthy accomplishment. . . ."



Carving Stone by Pneumatic Tool in Workshop at Savetti, at Aurisina

8. The state intervenes in economic production only when private initiative is lacking or insufficient, or when the political interests of the state are involved. Such intervention may take the form of supervision, encouragement or direct management.

All forms of socialism, including state socialism, are thus excluded by the Charter of Labor, the value of private initiative being duly recognized.

THE THIRD STEP

Within a year following their organization, the federations and provincial unions were combined under the law of September '28 into confederations and were made an integral part of the state. There are 13 National Confederations representing the joint interests of whole classes of employers and workers:



Sicily Sulphur Mines

Employers

General Confederation of Industry.
General Confederation of Agriculture.
General Confederation of Commerce.
General Banking Confederation.
General Confederation of Land Transport and Inland Waterways.
General Confederation of Maritime and Air Transport.

Workers

National Confederation of Industrial Syndicates.
National Confederation of Agricultural Syndicates.
National Confederation of Commercial Syndicates.
National Confederation of Banking Syndicates.
National Confederations of Land

"... The Fascist principles are very similar to those which we have been evolving here in America and many of them are being expressed and put into practice by the present Administration under the National Industrial Recovery Act. We should therefore not condemn this Act but be tolerant and patient until the basic ideals expressed in it can be worked out in practice. . . ."

Transport and Inland Waterways Syndicates.

National Confederation of Seamen and Airmen.

National Confederation of Professional Men and Artists.

THE FOURTH STEP

The necessity for greater cooperation within and between the 13 Confederations was met by the law of March 20, 1930, establishing the National Council of Corporations. Through it Fascism aims at technical economic cooperation between the various factors of production in the interests of national prosperity. The National Council of Operations is the supreme corporative organ of the state. It consists of seven sections corresponding to the great classes of national activity, namely agriculture, industry, commerce, land transportation, sea and air transportation, banking and credit, and intellectual production.

Each section is composed of an equal number of representatives of the syndicates of employers and of workers, of some government officials and experts, and the Council as a whole is under the presidency of the Prime Minister. A super council so established, by bringing together capital and labor, thus coordinates all the laws as well as all economic activity. The National Council is empowered to formulate the principles regulating the relations between the various categories of production and to issue rules and regulations which are binding on the syndicates.

(Concluded on page 28)

11th ANNUAL CONVENTION

Coal Division

The American Mining Congress



C. M. LINGLE,
National Chairman, Program Committee

RAPID progress is being made in the development of the program for the Eleventh Annual Meeting of the Coal Division, The American Mining Congress, which is to be held at Cincinnati, Ohio, May 7-11, 1934. In conjunction with the convention, the National Exposition of Mining Equipment will be staged.

A national committee, composed of representative operators from every coal producing district, is arranging for a splendid program. The first meeting of the National and District chairmen was held at Pittsburgh, Pa., February 17, and the first draft of the program was developed. The committee had a wealth of material from which to work, as The American Mining Congress had asked the industry for suggestions and had received more than 300 recommendations for as many different papers. The committee, under the leadership of C. M. Lingle, vice president, the Buckeye Coal Company, outlined the major sessions and a total of 50 papers. Each session will carry a wide range of discussions and the entire program will cover all of the important subjects before the industry at this time. A maximum number of papers will be devoted to the discussion of operating problems, but several papers will deal with the application of the Code of Fair Competition, fuel utilization, and research.

Cooperating with Mr. Lingle are the following district chairmen, each responsible for the papers to be presented for the district represented: Chas. F. Hamilton, vice president, Binkley Coal Company—Illinois-Indiana; C. W. Gibbs, general manager, Harwick Coal & Coke Company—Pennsylvania-Northern West Virginia-Ohio; C. A. Gibbons, general manager, Susquehanna Collieries Co.—anthracite; Chas. W. Connor, superintendent of mines, Nellis Coal Corporation—southern West Virginia; D. A. Reed, manager of operations, Consolidation Coal Company—Virginia-Kentucky-Tennessee-Alabama, and I. N. Bayless, assistant general manager, Union Pacific Coal Co.—far west.



C. F. Hamilton



Chas. W. Connor



C. W. Gibbs

The following representative committee, cooperating with the national and district chairmen, has been appointed:

Thos. G. Fear, assistant to president, H. C. Frick Coke Co.

Dr. L. E. Young, vice president, Pittsburgh Coal Co.

Jas. M. Cook, general superintendent, Imperial Coal Corp.

A. B. Kelley, general manager, Humphreys Coal and Coke Co.

Harry M. Moses, general superintendent, United States Coal and Coke Co.

L. J. Lorms, assistant to president, Lorain Coal and Dock Co.

W. P. Vance, general superintendent of mines, Butler Consolidated Coal Co.

T. F. Whalen, general superintendent, Pittsburgh and Erie Coal Co.

D. D. Dodge, vice president, W. J. Rainey, Inc.

Fred S. McConnell, vice president, The Enos Coal Mining Co.

F. S. Pfahler, president, Superior Coal Co.

J. B. F. Melville, Electric Shovel Coal Corp.

P. L. Donie, vice president, Little Betty Mining Corp.

T. J. Thomas, president, Valier Coal Co.

Carl T. Hayden, general manager, Sahaha Coal Co.

R. E. Salvati, manager, Pond Creek Pocahontas Coal Co.

W. J. Borries, general manager, Dawson Daylight Coal Co.

Jos. L. Osler, general manager, Blackwood Coal and Coke Co.

F. W. Medaris, general manager, Harvey Coal Corp.

Pearl Bassham, vice president, Harlan-Wallins Coal Corp.

E. R. Price, superintendent, Inland Steel Co.

Geo. H. Rupp, manager, mining department, Colorado Fuel and Iron Co.

H. H. Bubb, general superintendent, Cokedale plant, American Smelting & Refining Co.

Horace Moses, general manager, Gallop American Coal Co.

Samuel Tescher, chief engineer, National Fuel Co.

J. M. Hughes, vice president, Northwestern Improvement Co.

G. A. Knox, superintendent, Gunn-Quealy Coal Co.

R. J. Ireland, Jr., assistant to president, Owl Creek Coal Co.

Otto Herres, assistant manager, United States Fuel Co.

B. H. Stockett, general manager, Weston Dodson & Co., Inc.

R. E. Hobart, mechanical superintendent, Lehigh Navigation Coal Co.

A. B. Jessup, vice president, Jeddo-Highland Coal Co.

Milton H. Fies, vice president, De Bardeleben Coal Corp.

L. E. Geohegan, vice president, Gulf States Steel Co.

The National Exposition to be held in conjunction with the convention is breaking all records. Within 30 days after the release of floor plans, two-thirds of the available space was under contract. John T. Ryan, vice president, Mine Safety Appliances Company, and chairman of the manufacturers section of the coal division, is actively pushing the exposition and predicts that it will be the greatest exposition in the long line of successful expositions so far arranged. Mr. Ryan has the assistance of the following representatives of important manufacturing units:

G. R. Delamater, The W. S. Tyler Co.

J. C. Wilson, Ohio Brass Co.

E. A. Williford, National Carbon Co., Inc.

Chas. C. Whaley, Myers-Whaley Co.

B. G. Shotton, Hendrick Mfg. Co.

L. W. Shugg, General Electric Co.

Wm. Goodman, Goodman Mfg. Co.



C. A. Gibbons



I. N. Bayless



D. A. Reed

Tentative Outline Program—Cincinnati May Meeting, Coal Division, The American Mining Congress

"The Industry from the Practical Operating Standpoint."

"Facing the Future with the Coal Industry."

**"How the Manufacturers are Aiding the Coal Industry in Solving
Their Production Problems."**

Codes and Natural Resource Industries.

Definite National Planning for Coal Mines.

Review of Mechanical Loading.

Review of Newest Things in Equipment Field.

Efficiencies of Concentrated Mining.

Promotion of Safety Educational Work Through Safety Meetings.

Scouring Device for Removing Stains and Restoring Original Lustre.

Mining with the Coal Saw.

Air Cleaning Bituminous Coal.

Value of a Safety Program.

Shorter Work Week and Accelerated Mechanization.

Mechanical Loading of Slate in Entries and Air Courses.

Efficient Use of Electrical Power.

Drilling at the Enos Coal Company.

Promoting Safety Through Public Schools.

Development of Wood Preservation Underground.

Undercutting on Steep Pitches.

Maintenance of Electric Equipment from Viewpoint of Safety Inspector.

Underground Distribution of Power.

Multiple Shifting.

Wet Cleaning of Small Sizes.

Comparison Between Mechanical and Handloading as Relates to Power, Supplies and Labor.

Coal Sampling.

Cleaning Plant of the No. 4 Plant of the Pond Creek Pocahontas Coal Co.

History of Shooting During Shift.

Protective Clothing and Safety.

Air Shooting—An Entirely New Process.

Scraper Mining System.

Cleaning Plant of the Binkley Coal Company.

Efficient Ventilation.

Recent Advancement in Fuel Utilization.

Efficient Haulage Systems.

Systems Best Adapted to Mechanical Mining.

Latest Practice and Results in Dedusting.

Effect of Coal Code Upon Safety and Discipline.

Shaker Conveyors and Their Adoption to 22 Degree Pitch.

Gathering Locomotive Haulage.

Comparative Results in Wet and Dry Washing.

Problems of the Stripper.

Costs as Related to Mining.

Mining Company Town—Its Government—Its Sanitation—Its Social Outlook and the Ideal it Should Represent.

Mercury Arc Lighting.

Promoting Safety as a Sound Investment.

Research Work Along Utilization Lines.

Effect of Government Mine Sealing on River Water.

W. C. Richards, A. Leschen & Sons
Rope Co.

J. Milton Duff, Phillips Mine & Mill
Supply Co.

Frank E. Mueller, Roberts & Schaefer
Co.

C. B. Officer, Sullivan Machinery Co.

P. H. Grunnagle, Westinghouse Elec.
& Mfg. Co.

In addition, Mr. Ryan has appointed a special cooperating sales committee with R. L. Cox, sales manager of the mining division, Jeffrey Manufacturing Co., as chairman, and Frank E. Mueller, vice president, Roberts & Schaefer Co.; Wm. Goodman, vice president, Goodman Manufacturing Co., and C. B. Officer, chief engineer, Sullivan Machinery Co., as members of the committee. The General Electric Company, Schenectady, has

loaned the services of L. W. Shugg, head of its convention and exposition department, as special consultant in developing the exposition, and the Westinghouse Electric & Manufacturing Company has loaned W. D. Turnbull, manager of machinery electrification sales, for special cooperation as a member of the Committee on Arrangements, and in the development of the entertainment program.

Optimism seems to be the keynote of the convention and the exposition. Certainly confidence is returning in great measure, and everything points to a "round-up" that will be in keeping with the trend toward prosperity.

Secretary Ickes Replies to Bureau of Mines Committee's Recommendations

MEMBERS of the Committee on Bureau of Mines of the American Mining Congress have just been notified of the receipt of a letter from Secretary of the Interior Ickes acknowledging suggestions for the Bureau and promising "careful consideration if and when the Bureau becomes a part of the Department of the Interior." Our suggestions were contained in a letter sent January 22 which recommended (1) simplification of administrative activities of the Bureau; (2) extension of safety activities; (3) maintenance of present statistical set-up with emphasis on prompt publication of statistics; (4) curtailment and concentration of experimental stations, and (5) carrying on of research work which the industry is not equipped to do. We also pointed to the necessity for further aid to the prospector and small scale miner, stressing the importance of maximum encouragement toward the development of such strategic minerals as nickel, tin, platinum, manganese, chromium and mercury, and gold. "This work," our communication stated, "is so essential in viewing the future and so necessary at this time in providing additional employment that we consider an allocation of Public Works funds, to be expended by the Bureau of Mines over a period of 18 months from the present time to June 30, 1935, through an organization of field men under the administration of the Bureau of Mines, as most vitally needed."

In replying to our communication, Mr. Ickes stated: "I appreciate the spirit of helpfulness displayed by the American Mining Congress, and note the five general recommendations. . . . It is my understanding that . . . you would accent at present the subjects of safety and conservation, using laboratory and statistical-research methods to provide reliable information, and pointing the way to apply present knowledge in the field. I gather that your organization approves in general such projects as metallurgical investigations to conserve resources, studies of non-metallics to better their recovery and increase their usefulness, studies of explosives in relation to safety, and an extension of the safety work as now conducted. It also appears that you sanction safety problems relating to the technology of ventilation of mines and of ground movement and subsidence, and

(Concluded on page 39)

THE WHEELS OF GOVERNMENT

WASHINGTON is in an expectant mood. Many of the plans, proposals and hopes that have been but plans-proposals-hopes give promise of more substantial quality. Out of the turbulent mass that has been Washington there is emerging many definite things.

When the National Industrial Recovery Act descended almost unheralded upon industry, confusion replaced whatever of sanity there had been, and since that time industry has "muddled through" with no very clear understanding as to where it was going, certain only that it was "on its way." The atmosphere is clearing. The general plan is becoming more visible. And it is anticipated that things will be more understandable after March 5, when the Code Authority meeting is held. Five hundred industries will be represented, and some 7 or 8 thousand invitations have been extended to representatives of those industries to be present and register approval or disapproval.

There is much talk that the March 5 conference will lead to a "Super-Trade Association" which will become the policing power in Code enforcement. Certainly the topics for discussion embrace all of the problems of industry under NRA. They include, first and foremost, the price fixing and agreement program, with its tendency to monopoly and the stifling of competition. Small business has been badly damaged in many ways by the Codes, and its voice will be raised loud in the general melee. Hours of labor, controlled production, Code administration, and the overlapping of codes constitute the major topics to be discussed.

One of the most far-reaching Congressional proposals is the Connery bill, designed to substitute the present wide range in hours of employment in industry, by the arbitrary fixing of the work week as 30 hours. This is not a new bill. It has long been the cherished desire of several members of Congress, and the labor group generally. Mr. Connery introduced his bill last session, and it is now before the House Labor Committee and hearings are now being conducted upon it.

These hearings have brought out considerable disagreement as to the wisdom of the bill. The American Federation of Labor has unqualifiedly endorsed it; as have union labor organizations, generally. Secretary of Labor Perkins, at first, said to be wholly in favor of the bill, but her appearance before the

committee dispelled that idea, for while she advocates shorter hours for labor, she is in favor of the Code method of arriving at the standard. Hugh S. Johnson, NRA Administrator, appearing before the committee February 21, urged that in any shortening of hours that the NRA have the authority to control, and insisted that an arbitrary fixing of the work week by law, would seriously retard industrial progress. He recognized the desirability and the necessity for shortening the work week to increase employment, but urged that the plan adopted be a flexible one, developed through the Codes, and not an arbitrary law.

Insofar as the mining industry is concerned, its view was presented to the committee, on February 21, by J. F. Callbreath, Secretary of The American Mining Congress, who called the committee's attention to the following points: (1) that flexibility in the work schedule is necessary to keep production above consumption demand, (2) that NRA has full power to do what the 30-hour bill proposes, (3) that any increase in production costs which opens our markets to importations instead of increasing employment will put an end to employment, (4) that it is unwise during periods of unsettled conditions to make laws which might be entirely unsuitable during the prosperous times we hope will soon prevail, (5) that a 30-hour week in 1929 would have limited our production to about five-eighths of the goods which were consumed during that year and this shortage would have so enhanced prices as to work great hardships upon consumers.

There are many proposals before Congress, and

the major interest has been in the "Revenue Bill of 1934." The bill passed the House by an overwhelming majority, and is expected to pass the Senate with speed. It contains certain amendments important to the mining industries.

The American Mining Congress in making its presentation to the Committee on Ways and Means of the House of Representatives with particular reference to the report of the Sub-Committee on "Prevention of Tax Avoidance" and to the statement of the acting Secretary of the Treasury with regard thereto, said:

"So that our position may be clear, we state at the outset that we recognize it as right and proper that your committee should give its fullest and most careful thought to this subject and should strive earnestly for prevention of tax avoidance. We understand that your committee has had before it certain cases which it considers as grievous instances of tax avoidance and naturally desires to prevent these and other such cases in the future. Nothing we may say is intended to take any exception to such desire and intention of your committee or as objection to any fitting measures to that end."

"The great majority of the taxpayers of the country do not present such instances of tax evasion or avoidance. The statistics show that all but a small part of the taxes due have been paid by the taxpayers on their own original declarations. According to a statement of the Under-Secretary of the Treasury (*U. S. Daily*, Aug. 2, 1932) total collections of income and profits taxes since 1917 had aggregated \$47,696,120,436; collections on additional assessments had been \$5,981,632,503; refunds \$1,384,352,575, and credits or abatements \$2,661,509,775. This makes net additional assessments in excess of refunds, credits or abatements, \$1,935,770,152 out of the total collections of \$47,696,120,436. This is no argument against adequate measures to detect evasions, to prevent avoidance or to collect understated incomes. It is, however, a rather notable showing of a general assumption by taxpayers of their income tax obligations. It is warrant for a substantial plea that in trying to reach a few, injustice should not



be done to the many. We believe that some of the recommendations before you will, as they are now proposed, bear unfairly or with undue harshness on many whom you have no intention so to treat. Furthermore, we believe some of them will have an unfavorable effect on revenues and on business recovery such as you do not desire them to have.

"We believe we stand full-square with you in a desire for business recovery, re-employment of labor, re-establishment of markets and general prosperity for our people. On this depend both business success and government revenues. The tax bill should not impede the return of prosperity nor should it tend to dry up the sources of government revenues."

In the development of the changes and amendments in the Revenue Bill, one of the first items of interest to mining is the treatment of consolidated returns. The history of the past revenue bills was repeated in the attempt to eliminate such returns, but when it was again realized that the difficulties of administration on the part of the Treasury would be almost insurmountable, the disposition made by the Ways and Means Committee took the form of a 2 percent penalty for 1934 and succeeding years. It is to be hoped that a proper appreciation of the problems of industry will prevail and that this penalty will be removed as the corporation rate of 13½ per cent is surely sufficiently high to cause investors to hesitate and to make difficult the procurement of financing so badly needed by natural resource enterprises at the present time.

The new bill has made dividends from pre-March 1, 1913 earnings taxable. This is definitely a tax on capital and it is to be hoped that the legislative body which has the bill under consideration at this time will so view it. Our income tax laws have long recognized that dividends were only such distributions made by a corporation out of its earnings or profits accumulated after March 1, 1913. This was in accordance with the principle stated by the late Senator Underwood in the *Congressional Record* of September 28, 1921, pages 6517 to 6518, that March 1, 1913 was "the beginning of the time when incomes or profits could be treated as such for the purpose of taxation, holding that before that time the accumulated profits and dividends were treated as the body of the estate, as principal."

In that discussion, Senator McCumber stated for the Finance Committee:

"The committee agree entirely with the Senator that all accumulations prior to March 1, 1913, become a part of the principal, a part of the invested capital, of the corporation, and there is no intention to take those profits which had accumulated at that time and bring them forward and levy a tax upon them as profits;"

Senator Underwood further stated:

"As a matter of fact, a number of years ago we agreed in conference on this proposition. I think it will pre-

HIGH LIGHTS OF THE REVENUE BILL OF 1934 AS NOW IN THE SENATE COMMITTEE ON FINANCE

Personal Income Tax:

The bill provides for a single normal tax of 4 percent on net income. The surtaxes begin with a rate of 4 percent on income of \$4,000 to \$8,000.

Capital Gains and Losses:

Capital losses are allowed only to the extent of capital gains from sales or exchanges.

Consolidated Returns:

A penalty of 2 percent is provided in addition to the corporate rate of 13½ percent.

Dividends From Pre-March 1, 1913, Accumulations:

Such distributions are made taxable.

Foreign Tax Credits:

Credits reduced to one half of foreign tax paid.

Personal Holding Companies:

Tax of 35 percent levied in addition to 13½ percent now taken.

vent future lawsuits and future differences if the Finance Committee will propose a simple amendment, declaring that nothing in this act shall be construed as warranting a construction that the bill taxes accumulated profits or dividends accruing prior to the first day of March, 1913."

Credits for foreign taxes under existing law allow the taxpayer within limits to deduct for foreign taxes paid. Before the Ways and Means Committee, the Treasury Department recommended that present system of credits be continued. As the matter stands in the bill now before the Finance Committee a credit is permitted for only one-half of the foreign tax paid. This results in a double taxation which is a very definite handicap to American enterprise abroad and which will hinder the introduction and flow of American products in foreign countries.

A new section (Section 102), Tax on Personal Holding Companies, has been introduced into the bill which is of vital importance to natural resource owners whose income is derived from rents and royalties. Under this section a tax of 35 percentum is levied in addition to the corporation rate of 13½ percent. A personal holding company is defined as "any corporation (other than a banking or insurance corporation) if—(A) at least 80 percent of its gross income for the taxable year is derived from rents, royalties, dividends, interest—and (B) at any time during the last half of the taxable year more than 50 percentum in value of its outstanding stock is owned, directly or indirectly, by one or not more than five individuals." The term "individual" is defined: "an individual shall be considered as owning, to the exclusion of any other individual, the stock owned, directly or indirectly, by his family, and this rule shall be applied in such manner as to produce the smallest possible num-

ber of individuals owning, directly or indirectly, more than 50 percentum in value of the outstanding stock; and (E) the family of an individual shall include only his brothers and sisters, whether by the whole or half blood, spouse, ancestors and lineal descendants."

Capital losses are allowed only to the extent of capital gains. It is thought that the committee in writing the bill had no intention of applying this procedure to normal business transactions and the matter is of definite importance to mining activities where a plant, a town or a material item of equipment is abandoned, scrapped or disposed of, as at the present time there are practically no capital gains to offset the loss. If mining operations are to be denied such deductions, it is to be hoped that in the final writing of the bill that this situation will be corrected.

Thus far the writers of the bill are to be commended for the treatment of the deductions for depreciation and depletion and the attitude of the Treasury in this regard is very sound. In the statement of the Acting Secretary of the Treasury regarding the preliminary report of the Sub-Committee of the Committee on Ways and Means we find the following:

"Deductions for depreciation and depletion are fundamentally the same in character as deductions for the cost of goods sold in the case of a merchant. Consequently, the Treasury doubts the wisdom of the proposal to limit such deduction to 75 percent of the amount actually sustained, not only because of the doubtful constitutionality, but because of the inherent unfairness. A taxpayer who did not provide for depreciation of assets used in his business could not long remain in business and the income tax should be levied on the assumption that he will provide for such depreciation."

(Concluded on page 24)

MECHANICAL LOADING IN INDIANA

By P. L. DONIE

IN THE summer of 1927 the Linton Coal Co., owners of the Little Betty Mine, Sullivan County, Indiana, decided to abandon the mine, because of unsatisfactory conditions and unprofitable operation. The mine operates in the Linton No. 4 seam of coal, 5 ft. 10 in. in height, with a gray slate roof.

The Little Betty Mine was sunk in the year of 1917 operated on a hand loading basis, coal undercut by short-wall machines, bad roof conditions and other costly elements were partly responsible for the decision to quit.

After a careful survey of possible mechanical operation the Little Betty Mining Corp. purchased the mine and established one of the first mechanically operated mines in the Indiana field and first in the No. 4 seam of coal.

Room and pillar system of mining was continued although experiments of different systems were tried at various times without success, therefore, the room and pillar arrangement was finally accepted as the practical method for the No. 4 Indiana seam of coal.

Since the mine had been established with the thought of hand loading of coal the new company found many handicaps. One of them the small shaft, another the

small mine cars of 1½ tons capacity. Much thought was given to increasing the size of the shaft, also to skip hoisting, larger mine cars, etc. But since the coal acreage was limited these thoughts were abandoned as too costly for safe consideration. Therefore the small 1½-ton mine cars were continued in service. Small mine cars require a rapid change of cars to get a satisfactory tonnage from loading machines. Thus the small car not only became a serious handicap, but bad roof conditions limited the trackage system to the single track in all working places.

After many experiments in haulage, which only resulted in closer gathering attention at the face of the coal, with main line haulage brought up to the gathering point. At this time gathering locomotives are limited to gathering coal and do not haul coal out of active producing territory.

Efforts to load two cars on each service of the locomotive did not prove satisfactory until larger loading machines were built by the manufacturers, our first machines being too light to support a long loading boom. We now have three types of loading machines in operation. Each changed type being an improved machine over the one of previous manufacture.

Arc-wall shear machines now undercut and shear the coal, the short wall machines were junked in this more advanced method of cutting coal. The change after considerable experience with cutting and shooting has proven more satisfactory and profitable.

All coal at the Little Betty Mine is now undercut and sheared by the latest type machines. Loaded by mobile pick up machines. Drilled by electric coal drills. Hauled by electric trolley locomotives. We think we have a mechanical mine. Our experiences and efforts to establish a mechanical mine have been most encouraging and we are satisfied with the results. Mechanical mining in our opinion requires some careful thought. The proper equipment must be selected for the particular vein of coal and conditions under which machinery shall operate.

We do not offer our plan as a solution to the problems of mining, neither do we believe that our plans or methods can be successfully adopted in all mines.

The valuable features of mechanical mining are many, they are, practical, profitable and satisfactory, results in greater recovery of coal per acre, less hazard to employee and employer, and satisfied workmen. Dissatisfaction among workmen comes when machinery is first installed, because of men displaced and changed working conditions to those who remain on the job. After men become acquainted with their new work and the displaced men recognize the advancement of mechanical mining, loading coal by machinery becomes interesting and pleasant.

Our experience with employees in mechanical mining is greater efficiency, interest in safety, interest in their work, results in better workmanship, satisfied workmen, and interest in their fellow workmen and property, and the belief that a mining property can only be successful through their cooperation.

Concentrated effort and quick removal of coal in constricted territory lessens danger and returns greater tonnage per acre. Hazard in mining is greatly reduced by concentrated mining, interested and satisfied employees and closer supervision.

More men are employed on the surface when mines are mechanically operated. Because of necessary changes in preparation and handling of refuse. But this can be and is successfully being done at many mines.

Summing up our experience with mechanical mining, the Little Betty Mine has all the faults and disadvantages of any old mine equipped and developed for hand loading. Bad roof, small mine cars and the usual dissatisfied workmen. Costly production, keen competition, hazardous mining to employee and equipment. Discouragement to the point of abandonment, which would have caused

(Concluded on page 31)

* Vice President, Little Betty Mining Corp.

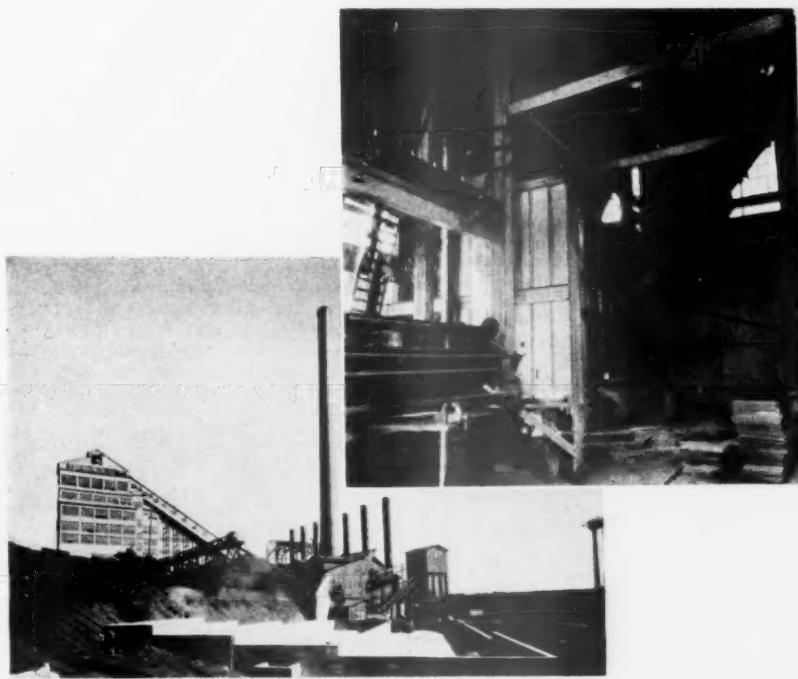


Above—Jeffrey Loading Machine at Face.
Right—Jeffrey Arc-Shear Machine Making Undercut.



POWER PLANTS AT THE MINE

By F. N. BECKER*



Upper Right—Boilers and Stokers in process of erection, showing the coal hopper and the coal feed to the stoker; the front water wall and its circulating tubes and on one boiler the beginning of the covering over the setting of iron plates. It also shows the temporary wall on the north side to permit expansion of this boiler plant in that direction over the top of the present boiler house.

Lower—Is a view looking East showing the spray pond in the process of construction and the West end of the old boiler house and the old ash handling equipment. It shows the old iron stacks and immediately behind that the new two-hundred-and-forty-foot stack put on the new boilers. The steel work on the boiler room appears in the middle of the picture behind the stack. The picture to the left is our most modern breaker, built during the war and is known as the Highland No. 5 breaker.

MODERN and efficient power plants operated by mining companies are seldom found. In fact, good boiler practice is unusual, and properly directed and maintained generation stations are rare. It is difficult to account for this condition in an industry so dependent upon abundant power, especially when the cost of this power is frequently the second largest operating charge. There are perhaps several reasons for this condition, and it would seem at this moment that a critical examination of some of these reasons was in order.

I wonder if perhaps the most potent reason is not "super salesmanship," of the abstract and undemonstratable idea, that, "mining companies are not experts in power generation," and "experts are needed to secure efficient operation." These salesmen also stress the point that a generating station is a nuisance. The power companies grow strong taking care of our nuisance. What price can we continue to pay for this nuisance relief?

A few years ago, before the development of adequate small generating units, it was reasonably true that the cost of generation was excessive, as small turbines were inefficient, necessitating the use of expensive reciprocating prime movers, difficult to maintain and not efficient in operation. Modern generating equipment, the small turbine, so designed as to give an efficiency comparable with that of large units has eliminated much of this differential.

It is undeniably true, however, that generation is not necessarily good for all locations and may be inefficient and uneconomical due to the lack of water and high cost fuel. This condition exists in relatively few locations. It is, in fact, probably universally true that where fuel and water are available at reasonable figures, the cost of generation in a small plant is less than the cost of generating in the large plant, plus distribution. Should mines then not have their own generating stations?

Should this be construed as an attack upon the power companies? I do not believe so. Are the power companies overbuilt for the normal industrial and domestic load with the return of normalcy? Will not their equipment be loaded to a safe point then? Are further capital commitments desirable and warranted by utilities?

* Director of Research, Jeddo Highland Coal Co.

Numerous small plants will provide work for more men than a few large stations. A modern power plant of small size will give work to about 200 men for six months in all of the ramifications it takes. It encourages mining of iron, copper, slate, zinc, the conversion of metals and the fabrication thereof, the transportation thereof, and the assembly in place. There is practically no industry that is unaffected by power plant building as even jewelers may be utilized in the manufacture of the control instruments necessitated by modern design.

We are now finishing a generating station I designed to float in parallel on the power companies lines; we to carry the base load and they to deliver our excess requirements. They fought this idea for a long time, but recently stated that they believed this type power was the coming power; that cooperation was preferable to antagonism, and the sooner power companies realize this the sooner they would recover.

I have recently had the occasion to discuss plant design with about twelve outstanding firms of consulting engineers, some of them very large. Not one organization seemed to have any conception of mine loads. They were familiar with conventional industrial loads, but could not seem to understand our special problem. They were lost when they found a string of properties hanging on a distribution line, each a unit in itself, and operating without relationship to the others, where one group may work and the others remain idle on the same day or where they work together or all may be idle together. Unquestionably this imposes severe design conditions.

Organizations of this kind approaching cold prospects with the idea of selling the idea of a new plant start off wrong in that they do not understand the specialized problem before them and as a result introduce a question of doubt into the prospect's mind as to their ability to meet these conditions.

Most engineers seem to understand the idea of firm power, continuity of service and security of capacity only. Do long transmission lines give this, or is there even security of property this way? Have not all of us wished, when the lines were down, that we and our own organizations could do something about it? Why not? We pay the power companies for firm power and do not get it. We are not secure for even essential operations. Power outages are generally accepted as "acts of God" which no one seems to do anything about and very few people compute the cost.

Few mining operations are so exacting as to require absolute continuity of operation. There are many times it is possible to design a plant which may be designed to give firm power to a point, which point is determined by essential operations, namely pumping and fans. Other non-essential operations are suitable for secondary power as for underground and surface transportation, air compressors and mill operation. Where several mining operations link together it is frequently possible to design firm power for one or two operations and the

essentials of the other operations and speculate on continuity for the rest.

Why then not design for firm power to a point, which point is determined by the essentials of operations and required continuity, considering carefully that relatively few severe outages occur in a properly designed and maintained plant. Compare these costs with the capital charges of 100 per cent firm power. Put your generation on the lines at the same voltage as the power company and in case of severe failure, purchase emergency power, transform to convenient voltage at utilization centers, and the power standby question is solved.

One of the most vital features probably is the lack of money and the lack of courage of operators to invest important capital when they are not secure in the future of the mine. They hesitate to borrow at high interest rates or to pay a bonus for a bond issue for modernization and as a result even recognized improvements are not made.

Would it not be a good idea to assemble information on the costs of mine power, purchased and made, and utilize it as the basis of negotiation for federal loans to mining at a low interest rate for modernization of machinery? The loans would materially assist our own industry, increase employment therein and all industry would be aided. Construction is the backbone of prosperity and as small mining power plants are generally self-liquidating, in from two and a half to four years they constitute the most desirable type of construction work.

graft, and the frank admission that in the handling of so large a scheme, that graft is inevitable, but that the Government has been most prompt in cleaning house and punishing every proved irregularity. Nevertheless, it is known that the Administration is exceedingly anxious to get out-from-under the tremendous responsibility of these two projects, and that it is closely scrutinizing proposals for "Long Range Planning." The two industries so far involved are the Waterways and natural resources. Plans are being considered for "definite planning of waterways projects for improvement over a long period of years." Under the plan proposed the country would be divided into watershed divisions; a list of projects in the order of their importance to the section and the nation would be mapped out, and a carefully regulated program of improvement of rivers and harbors would be evolved. It is generally agreed that if the Tennessee Valley Authority works out as the Administration hopes, there is little question that the new plan will be eagerly adopted . . . for TVA is the father to the whole plan, and is in fact the "experiment station" for a wholesale planning program. We already have a special Committee of Cabinet Members to make plans and form a permanent commission to study the idea. For natural resources a planning board has been proposed for oil, bituminous and anthracite coal, natural gas and water power.

Representatives of 44 State Labor organizations met in Washington, during the month, to confer with the Secretary of Labor on the development of State Labor Codes. It is understood that a similar conference will be held by the employers in the various States and that Miss Perkins will give both sides an opportunity to be heard. General Hugh S. Johnson has submitted a model State Recovery Law to the governors of the States interested in the plan.

The next sixty days should see industry well established upon the path outlined by the Administration.

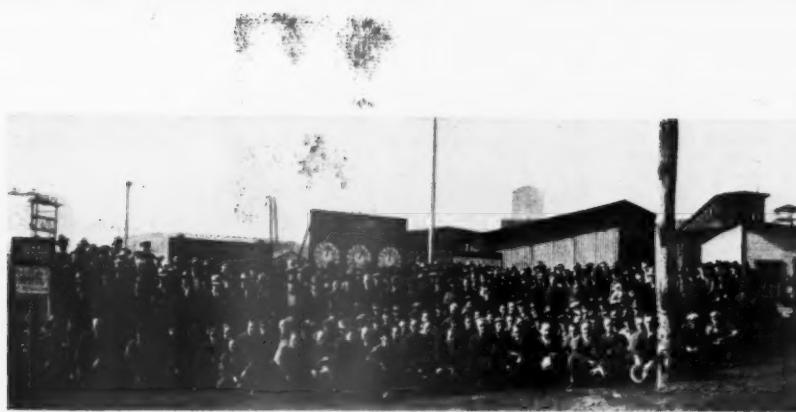
Wheels of Government (Continued from page 21)

The trend in matters relating to silver seem to indicate that the large Congressional Silver Block will not force the issue at this time. It is known that the Treasury Department is considering a plan that will provide for the addition of silver to the monetary system. Secretary of the Treasury Mr. Morgenthau has assured the silver group that silver rehabilitation is on the Administration's program. However, it is not anticipated that action in regard to silver will be taken before April 1, which is the deadline for the ratification by the nations signatory to the London Agreement. The strength of the silver group must not be underestimated, and it is predicted that unless it shall immediately push its program, that it will have difficulty in any plan for remonetization. The Administration is said to be of the opinion that it already has authority to automatically increase the market price for silver by additional purchases to the point where the Government owns all the silver, thus providing a "profit" from the advance in price. Overseers do not believe such a plan will be adopted, but that a moderate purchase plan will obtain.

There has been insistent criticism of the CWA and the PWA activities. These have mostly emanated from small businesses, unable to compete with the wages established by these agencies. There has been general charges of stupendous

CAMBRIA COUNTY, Pa., had the lowest and therefore the best fatal-accident rate among men employed at bituminous-coal mines of any of the 12 largest coal-producing counties in the United States in 1932, according to figures compiled by the demographical division of the United States Bureau of Mines. The fatality rate among coal miners employed in Cambria County during that year was 1.05 per million man-hours of work performed, only slightly more than half as high as the average rate for the bituminous industry in all States, which was 2.00.

The best county record for the prevention of nonfatal injuries was that of Fayette County, Pa., where the average rate for injuries of a nonfatal type was 56.69 per million man-hours, the average rate for bituminous mines in all States being 82.08.



Safety Activities of Tennessee Copper Company, Copperhill, Tennessee

By H. T. HARPER*

PRIOR to July, 1919, safety was an unknown subject at our plant. During the year we started in a small way to safeguard our machinery and worked gradually until we thought we had the plant in excellent condition from the standpoint of making conditions safe. The use of goggles was introduced in several classes of work. Safety work was carried on in a slipshod manner for several years, mostly by one man who devoted a small part of his time to that work.

During the year 1923 we had an average force of 813 men and a total of 413 lost-time injuries. A lost-time accident is defined as one that causes disability beyond the remainder of the day on which the accident occurred. Early in 1924 we decided that the guarding of machinery and the work we were doing did not prevent all accidents and that we must adopt a different program if we were to make progress in safety work.

In August, 1924, the manager held a meeting with all department heads and stated in no uncertain terms that accidents must be stopped. From that date on safety was a major operating problem and the slogan "Safety First" was



"Safety Flour"

given first place in all work. Instructions were issued that in the planning or execution of any job safety was the first consideration. From that time on safety work has been a problem of good salesmanship and education.

A number of meetings were held with the employees asking for their cooperation in this work. At first we organized safety committees, made monthly inspections and by the end of the year 1924 a decided improvement had been made. We worked along these lines until January,

1927. Up to this date all safety activities were carried on by the superintendents of the various departments with the superintendent of the service department acting as safety engineer. His duties as personnel manager took too much of his time so two safety engineers were employed to devote full time to safety work.

One engineer devotes his entire time to safety work in the mining department and reports to the mine superintendent. The other safety engineer works under the supervision of the service superintendent, who is in charge of safety work. The safety engineers spend their entire time in the field and are not required to do office work. They are in daily touch with all work and are mixing with the workmen all the time. We think that "personal contact" with the workmen while they are doing their work is one of the most important points in safety work.

After the safety engineers were employed we discontinued our safety committees. Departmental and general safety rallies were held periodically. Often when all departments operated a month with a clean safety record we passed out small tokens, such as cigars,

* Superintendent, Service Department.

watermelons, bacon, sugar, lard, flour, coffee, apples, oranges, hams, etc. These were given to create or keep up interest in safety work.

In 1930 we organized regular weekly safety meetings in the different crews. Each crew holds its own meeting on company time, the meetings being short and snappy, generally for a period of 15 or 20 minutes. Each crew selects one of their men who acts as secretary and keeps a record of their activities. Copy of their record is sent to the superintendent of the service department. The secretary appoints a member of the crew to conduct the next meeting. These meetings are actually workmen's meetings and are conducted by them. They rotate the leaders so that over a period of time each workman has an opportunity to conduct a safety meeting. The foremen of the crews attend these meetings but are not in charge. The safety engineers attend as many meetings as possible and participate in the discussions and help guide them in their work. Our average force for the year 1933 was 573. A total of 391 safety meetings were held and the safety suggestions numbered over 1,500. Practically all of these suggestions were carried out.

Last year we made a special effort to operate Burra Burra mine without a lost-time injury. The last accident in the mine was on December 15, 1932, and the record is still clean on this date, February 23, 1934. As a special incentive in this campaign we held monthly rallies for all mine and mill employees. Dinners or "Dutch lunches" were served. These rallies lasted one hour and were held on company time. Varied programs were put on, music, dancing, short pep talks on safety, colored minstrel, etc.

On December 22, 1933, a large safety banner was presented to the smelting department for having the best departmental record, having worked from August 22, 1929, to December 22, 1933, a total of 1,583 days or 905,000 man hours without a lost-time injury. This banner was hoisted to the top of a high flagpole at the entrance of the plant and is to float until that department has an accident, at which time it is to be lowered by the superintendent of that department, who will present it to the department having the next best record. We had a large percentage of our crew present at this presentation and on that date as the men left the plant at quitting time each man was presented with a smoked ham. Seven hundred and eighty hams were distributed.

In 1931 the Joseph A. Holmes Safety Association awarded the Tennessee Copper Company a certificate of honor for having reduced the number of accidents from 413 in 1923 with 2,192,936 man-hours of exposure to 15 in 1930 with 2,757,114 man-hours, the frequency rate being reduced from 188.33 in 1923 to 5.44 in 1930 or a reduction of 97.11 per cent. In 1932 they granted another certificate of honor for operating the following departments: Smelting, roasting, sintering, slag, acid and copper sulphate, flotation, railway, construction, mechanical, power and electrical, laboratory, and miscellaneous, with no accidents from January 28, 1932, to December 31, 1932, a total of 869,588 man-hours, and with but one lost-time accident in 1932 in 958,826 man-hours exposure. The Eureka mine worked 200,393 man-hours since the last accident on June 7, 1928.

Our record for 1933 was two lost-time accidents with a total of 1,364,738 man-hours exposure with a frequency rate of



Awarding Safety Trophy

1.47. Our frequency rates from 1923 to date are as follows:

1923	188.3
1924	144.4
1925	83.8
1926	48.8
1927	17.2
1928	21.2
1929	13.7
1930	5.4
1931	5.0
1932	6.5
1933	1.47

A reduction of 99.22 per cent in ten years.

Our departmental records as of December 31, 1933, are as follows:

Departments	Hours worked	Date of last accident
Entire plant	1,058,751	Apr. 19, 1933
Miscellaneous	974,523	Feb. 8, 1928
Smelter	910,519	Aug. 22, 1929
Copperhill & flot.	811,405	Apr. 19, 1933
Mechanical	724,030	May 10, 1928
Leadburners	672,024	Nov. 4, 1926
Construction	462,920	Oct. 13, 1930
Laboratories	349,719	Feb. 27, 1923
All mines	316,418	Dec. 15, 1932
Burra Burra mine	312,127	Dec. 15, 1932
Flotation	276,750	June 30, 1930
Acid	232,137	Jan. 12, 1933
Eureka mine	205,519	June 8, 1928
Copper sulphate	192,309	June 28, 1923
Roasters	92,241	Jan. 13, 1931
Power & electrical	79,626	Nov. 25, 1931
Commercial slag	77,170	May 24, 1930
Railway	74,349	Apr. 19, 1933
Sinter plant	65,975	Apr. 1, 1931

We feel that our success in safety work has been achieved largely through the close daily contact of the safety engineers with the workmen and the interest and cooperation of each individual workman which has been secured through the weekly crew meetings, with the whole-hearted support of the management in the safety movement.

THE ALPHABET PARADE is moving merrily along. The following is a complete list of the 41 projects sponsored by these Alphabet combinations, and their meanings:

YEAR END ALPHABET OF THE NEW DEAL

(There is herewith presented the alphabetical designation—and its explanation—of each of 41 agencies of the Federal Government set up under the New Deal. This list includes, 13 boards, eight corporations, seven administrations, five miscellaneous agencies, three councils, three committees—with various more or less temporary ones omitted—and two authorities.)

Administrations: (7)

AAA—Agricultural Adjustment Administration

CWA—Civil Works Administration

FACA—Federal Alcohol Control Administration

FCA—Farm Credit Administration

FERA—Federal Emergency Relief Administration

NRA—National Recovery Administration

PWA—Public Works Administration

Authorities: (2)

EHFA—Electric Home and Farm Authority

TVA—Tennessee Valley Authority

Boards: (13)

BVA—Board of Veterans Appeals

CAB—Consumers' Advisory Board

CSB—Central Statistical Board

DLB—Deposit Liquidation Board

IAB—Industrial Advisory Board

LAB—Labor Advisory Board

NCB—National Compliance Board

NLB—National Labor Board

NPB—National Planning Board

NPSB—Non-Member Preferred Stock Board

PAB—Petroleum Administrative Board

SAB—Science Advisory Board

SIRB—Special Industrial Recovery Board

Committees: (3)

ECPC—Executive Commercial Policy Committee

—Peek Committee on Foreign Trade

—Bruere Committee on Coordination of Credit Agencies

Corporations: (8)

CCC—Commodity Credit Corporation

DMC—Dairy Marketing Corporation

FDIC—Federal Deposit Insurance Corporation

FHC—Federal Housing Corporation

FSRC—Federal Surplus Relief Corporation

HOLC—Home Owners Loan Corporation

RFC—Reconstruction Finance Corporation (Not New)

SHC—Subsistence Homestead Corporation

Councils: (3)

BAPC—Business Advisory and Planning Council

EC—Executive Council

NEC—National Emergency Council

Miscellaneous Agencies: (5)

CCC—Civilian Conservation Corps. (Also known as ECW—Emergency Conservation Work)

FCOT—Federal Coordinator of Transportation

NRS—National Reemployment Service

PRA—President's Reemployment Agreement (Administered by NRA)

SD—Securities Division of Federal Trade Commission

Keeping Records to Find Where Treated Timber Should Be Used

By HARRY E. TUFFT*

IN THE PAST 25 years mine timber preservation has advanced from pioneering work done by a few mining companies until it has become a recognized feature in mining practice.

The writer has been interested in mine timber studies with special regard to the more economic utilization of timber for over 15 years, and for three years (1928-30) was engaged in commercial work related to increasing the use of treated timber in the mining industry. In the course of his work, visits have been made and mine operators consulted in numerous large bituminous coal mining operations in Pennsylvania, West Virginia, Illinois, Ohio, and Indiana, also the large anthracite operators in Pennsylvania, and various iron mines in Michigan and copper mines in Arizona, supplemented by underground observations in a number of the metal mines and bituminous coal mines using treated timber or interested in having a survey made.

Need for Mine Timber Preservation

The rapid and continuous depletion of supplies of standing timber in the vicinity of mines, coupled with the increasing cost of timber, has resulted in higher timber costs and increased transportation costs of the mining districts. Many mines that years ago cut their timber from land adjacent to the mine site, are now using timber shipped from a distance of 300 to 400 miles.

Elimination of waste of timber and the resulting waste of resources is one of the outstanding problems of all wood-using industries today. The mining industry suffers annually heavy losses through premature failure of timber in workings where longer service is desired, resulting in replacement with new timber at large expense for material and labor.

Keeping Adequate Records of Timber Service in Mines

Mine operators should keep records on mine timber that will afford the necessary data for determining the possible savings from preservative treatment. Some primary questions the mine operator should be able to answer before making his decision on preservative treatment for his particular mine are:

1. Quantity and cost of timber going into permanent workings annually.

* Engineer, Washington, D. C.

2. Quantity and cost of annual replacements due to decay.

3. Quantity and cost of annual replacements from breakage or crushing.

4. Life of untreated timber in different parts of the mine.

5. Desired life of timber.

6. Estimated cost of treated timber.

7. Annual cost of treated timber in place compared with untreated timber.

When an abundant supply of cheap timber could be cut near the mine, as was the case in the majority of mining regions, the mine operator did not have much incentive to keep records on timber used, other than costs of timber and timbering labor, distributed to cost per ton of ore or coal mined. With present costs of timber, labor and increasing length of haul to the mine, many operators are paying more attention to timbering costs and studying them in more detail. Some of the larger and more progressive operations now keep detailed records that give information as to where different consignments are placed, the date of installation, and the period of life, the cause of failure, the number of replacements, and other details.

Plan for Keeping Informative Mine Records on Timbers

The following suggestions are offered to mine operators as one method of making a survey of a mine and obtaining more reliable records on mine timber. It should be made the duty of one engineer to initiate and carry out the timber study. The engineer selected should have at least a practical knowledge of timbering methods, and be in sympathy with preservative treatment.

1. Prepare from the company books, tables showing the quantity and cost of timber delivered annually at the mine, classified according to the different sizes and uses.

2. Express these quantities in comparable units of measurements, preferably cubic feet, or M board feet and costs in cents per cubic foot, or dollars per M board feet. For round timber, calculations will be facilitated by computing ac-

tual cubic feet and actual board feet in the round timber used, and not the amount of sawed lumber that theoretically could be sawed from a given size of stick.

3. Prepare base maps of the mine drawn on a scale of hundreds of feet or thousands of feet to the inch, or other convenient unit.

4. Show on these maps all openings of a permanent nature, such as haulage ways, air ways, and other principal openings that will be in use more than one year. Indicate prospective developments or extensions of such openings. These openings will cover practically all places in any mine, where timber may not give the desired service, so far as decay is a factor in failure.

5. Mark off these openings in sections on the maps with a protractor or compass to scale in 1,000-foot and 100-foot sections.

6. Number the sections systematically.

7. Make an underground inspection of the mine, along these openings, noting the method or type of timbering, condition of the timbers, and the approximate size, number and spacing of timbers or sets in a given section. Obtain from each foreman as much data as possible on the life of the timber, replacements, timbering costs, and renewal costs, in his section of the mine. The miners will often remember when certain places were timbered.

8. Prepare tables for use with the map, showing the relative number of timbers or sets used in each 1,000-foot section, quantity of timber in cubic feet or board feet, cost of delivered timber, and cost in place.

9. Show the annual timber replacements for each section, and cost of renewals in place.

10. Have the mine foremen report regularly on new timbering work and replacements, and correlate these reports to the sections shown on the map.

11. Start test sections underground, and supply date nails or other dating devices with instructions to date all new timbers when installed, or sets of timbers.

12. From the above data prepare a summary or tabulation showing total amount of timber used in the permanent openings, the average life obtained, the average life desired, and the average amount of new work and amount of renewals.

13. Calculate the decrease in annual cost of timber in place, if an extension in life of 10, 15, 20 years, or greater periods, were obtained, as compared to the present life of untreated timber.

14. Calculate the expenditure for treated timber that would be justified if this decrease in annual cost of timber were obtained.

15. Calculate the annual cost of treating all mine timber to be used where it will probably not give the life desired, due to failure by decay, on a basis of \$10, \$15, \$20 and \$25 per M board feet, or 10, 15, 20, and 25 cents per cubic foot. This range should cover the probable cost of treating timber in practically all cases.

16. Compare the results with the justified expenditure.

17. Ascertain which species used in the mine are easier to treat, and which are more difficult. Usually a larger saving can be made by treating an inferior cheaper species than a superior, more costly species.

Discussion of Plan

The available mine records may show only number of carloads, carload weights, number of timbers purchased or used, number of lineal or "running" feet of timber, or other factors which permit only rough approximations in cubic feet or board feet, but will be sufficiently accurate for a preliminary survey. The various log scales for computing board feet do not, of course, represent the exact amount of wood in round timber, although of course they can be converted to cubic feet, if the scale is known. As there is no waste in using round timbers in a mine since the whole perimeter of the stick is used, there is no object in converting this material to saw log scale.

Data on the quantities of timber that go into the temporary openings that will be in service less than one year, such as rooms in coal mines and stopes in metal mines, are not necessary, as timber rarely would fail by decay in any mine in less than one year. Of course, if the timber in such workings is recovered in whole or in part, before abandoning the working, treatment should be given consideration.

On first trial there is usually lack of definite information as regards life of timber, or amount of replacements, but the actual quantity of timber in place can be roughly ascertained by counting sets and noting untimbered spaces. For example, knowing the amount of timber in a drift set, and the spacing, it is easy to calculate the quantity in a 100-foot drift.

The purpose of the maps and tables is to afford a continuous record of the timber that enters the more permanent workings. The mine operator should be able to decide, with such data in hand, how much he can afford to expend for treated timber.

Timber can be thoroughly treated with proper preservatives, at costs ranging from \$10 up to \$25 per 1,000 board feet, depending on the type of plant. It is not advisable to use superficial dipping treatments that often cost up to \$10 per 1,000 solid board feet (84 cubic feet). For best results pressure treatment plants are preferable to hot-and-cold bath plants. These figures are based on cost data obtained from various mines operating treating plants, and include peeling or sawing, seasoning, and treating. However, often labor is not in-

cluded, as much of the labor around the treating plant may be done by switching crews and other surface employees. A number of commercial wood preserving plants are prepared to treat timber under pressure by standard approved methods for mine operators, or supply treated timber cut to specifications, at costs that will compare favorably with these figures. The timber when properly treated in large pressure plants by engineers skilled in preservative treatment, by standard preservatives, will give the desired period of service in most cases. Records are available where treated timber is still in service after 10 to 20 years, when good penetration is obtained, for installations in mines, railroad tracks, fence posts, under conditions where untreated timber fails in a few years from rot.

Dating Devices

In a number of instances no definite records had been kept of treated timbers that were installed in certain mines as tests. The superintendent and the men who did the work were no longer employed, and no one of the present employees were aware of the location of the timbers.

Dating nails of copper, monel metal, and other metals are used by some mine operators. Other means that have been used include attaching metal tags to the timber sets, and driving metal pegs into the roof or wall near the timber. The latter method has the advantage that the markers can be of adequate size to be easily visible, and can be placed conveniently for inspection. Whatever method is used, it should be systematically followed, and show the date of installation. Office records and maps should be kept showing the location of the treated timber, and the date of its installation. *"All timber to be placed where untreated timber will require replacement due to failure from decay, should be treated."*

This rule is based on two facts: (1) the cost of replacing timber (for example, a three-piece set) is almost invariably greater, and frequently more than double the cost of the original timbers in place, and the expense of delays or interruptions in mining from timber renewals may greatly exceed such considerations as cost of timber involved. (2) The cost of properly treated timbers in place is generally not more than one and one-half times the cost of untreated timber.

Italy's "New Deal" for

Labor

(Continued from page 16)

MINISTRY OF CORPORATIONS

Coordinating all the various activities is the Ministry of Corporations, headed by the Prime Minister, Mussolini. It was instituted in July, 1926, to deal with matters concerning the corporative system and its organization. Through it the Fascist State directly supervises and controls the operation of the syndical machinery it has built up. The Ministry has the direct supervision of all the syndical associations of employers and workers existing within the nation, the registration and enforcement of national and provincial collective labor contracts,

the general supervision of collective labor relations, the carrying out of programs of syndical education and instruction, the elaboration of statistical information on questions of production and labor, and the supervision of the great Fascist social welfare organizations.

Some further steps that have been taken and which may be of interest are the laws of March 16, 1933, establishing the 48-hour week and the 8-hour day. Price-fixing has not been compulsory except for certain basic commodities such as rice, but one of the aims of the government has been to bring about voluntary agreements which provide for a living wage for all workers. Unemployment has been reduced to 884,560 for a population of 42,000,000—considering the meager natural resources that is a worthy accomplishment.

On May 15, 1933, a royal decree established regulations governing the application of the law authorizing the government to control the erection of new plants or the enlargement of existing plants in certain industries by a system of permits.

WHAT THE PEOPLE THINK OF ALL THIS

During the first few years there were many sceptics among the Italians who doubted the efficacy of this new doctrine "one for all, and all for one," they feared to lose their freedom under such stringent control of their economic life by the state. Now these same sceptics have become ardent supporters of the Duce. They have seen a stupendous development of the natural resources of the nation; they have seen economic stability and efficiency replace disorganization; they have, to their surprise, not lost their freedom, but experience a new sense of liberty in the unshackling of the bonds of fear of unemployment or of overstocked markets and in the hopes and aspirations for the future which have arisen in them on seeing what has been achieved.

Under this new corporative system all the social classes in Italy have been welded together. The control of industry exercised by the Italian Government in the endeavor to maintain continuity of production and to avoid over-production and harmful competition, with a view to assuring employment at a fair wage to the worker and a steady market at profitable prices to the employer, appears to be well on the way to success. The contributions levied from all the members in each occupational group by the syndicates are a burden on industry but are amply justified by the benefits accruing to the working class from the uses to which the funds thus raised are put. A large majority of the Italian people have now accepted the principle of cooperation of all productive classes under the guidance of the state, and evince enthusiasm and good will in aiding the government. The spirit of collaboration has permeated from the somewhat limited sphere of labor problems and relations to the much wider field of economic problems of a national character. The Italians are now rightly proud of their country and of what it has accomplished.

Milling Methods and Costs at the Golden Cycle Mill, Colorado Springs, Colorado*

By L. S. HARNER†

THE ORIGINAL MILL had capacity to treat 37,000 tons of oxidized silicious ores per month by roasting and cyanide methods. When it treated what may be termed "basic ores" the capacity was 32,000 tons per month.

A small-capacity cyanide unit was added to the original plant about two years ago for the purpose of treating miscellaneous gold-silver ores which did not require roasting. In the latter part of 1929 a concentrator unit was added for the treatment of complex sulphide ores by selective flotation methods. The tailings of this latter unit are further treated in the cyanide plant for additional recoveries of gold and silver.

The changes in operating methods at the Golden Cycle plant since 1907 have been made because of—

(a) Additional operating knowledge gained from direct experience and from information received from outside sources.

(b) Mechanical improvements which include materials of better quality furnished by manufacturing companies.

(c) Changes in methods and equipment brought about by changes in the character of ores treated.

The gold ores which are treated by roasting and cyanide methods are the sulphotelluride ores received almost exclusively from the Cripple Creek district. These ores are chiefly gold bearing and contain very small amounts of silver and negligible quantities of base metals such as lead, copper, zinc, arsenic, antimony, and mercury.

TYPICAL ANALYSES OF CRIPPLE CREEK ORES MILLED		
Constituents, percent	Siliceous oxidized ore	Dense hard ore
Insoluble	86.70	75.90
Al ₂ O ₃	2.30	3.40
Fe	3.50	4.00
CaO	1.57	5.12
S	1.79	1.8 to 2.30
MgO	0.50	1.40
Loss Ignition	3.20	6.50

* The Bureau of Mines will welcome reprinting of this article provided the following footnote acknowledgment is made: "Reprinted from U. S. Bureau of Mines Information Circular 6739."

† Manager, Golden Cycle Corporation, and one of the consulting engineers, U. S. Bureau of Mines.

The plant as previously noted treats three general classes of ores by the methods which follow:

1. The average-grade Cripple Creek gold ores are treated by roasting followed by cyanidation.

2. Low-grade Cripple Creek gold ores are first treated by flotation. The flotation concentrates are sent to the roasters which treat the average-grade Cripple Creek ores.

3. Ores which contain lead, copper, or zinc are treated by selective flotation methods. The lead concentrates and zinc concentrates produced are shipped to smelting points; the flotation tailings of the zinc circuit are cyanidized.

The ore is conveyed from the storage bins on a 14-in. belt which is equipped with a Ding's magnetic head pulley for the removal of tramp iron. The conveyor belt discharges the material onto a stationary screen having $\frac{1}{8}$ -in. holes and set at a slope of about 40 degrees. The oversize passes to a 5½-in. Symons cone crusher set at $\frac{1}{8}$ in.; the crushed product joins the stationary screen undersize and both are fed to four Hummer screens equipped with 4½-mesh Rek-Tang screen cloth. The Hummer screen oversize is further reduced by three Schmidt comminuters; the latter are dry-grinding ball mills. These mills operate in closed circuit with the 4½-mesh screens. The undersize products of the 4½-mesh Hummer screens comprise the feed to the roasters and are conveyed to storage bins.

The Symons cone crusher will handle 100 tons of ore per hour, the feed being 3½- to 4-in. maximum size and the product $\frac{1}{8}$ -in. maximum size.

Ores received in the early operating days of the Golden Cycle plant could be reduced to roasting size quite readily. However, as lower levels in the mine were reached the character of the ore changed to a more basic variety and at times to somewhat dolomitic unoxidized material. The crushing of these lower-level ores became more difficult.

At the beginning of operations the crusher product was reduced to roaster feed size by three 6- by 6-ft. Schmidt comminuters. The latter used 5-in. balls and were equipped with diagonally slotted screens having 9/64- by $\frac{1}{8}$ -in. holes. These screens were attached to each mill and operated in closed circuit with it, the screen oversize being returned to the mill.

As the difficulty of crushing ore increased a 36-in. Symons horizontal disk crusher and a 48-in. Symons vertical disk crusher were added to the crushing circuit ahead of the Schmidt ball mills. The remodeled unit operated in a satisfactory manner for a while, but as more of the mines reached deeper levels the cost of crushing ore increased.

The next change made was the addition of a 10-ft. by 48-in. dry-grinding Hardinge ball mill to the grinding units already installed. This change was followed by the installation of a 5½-ft. Symons cone crusher.

The Symons cone crusher displaced the horizontal and vertical Symons disk machines and also rendered the operation of the 10-ft. Hardinge mill unnecessary. Since the installation of the cone crusher, power costs in this department have been reduced one-half and the time required for crushing has been reduced one-third. The saving made by this installation amounts to \$0.08 per ton of ore handled.

The ore is delivered from the roaster storage bins to three Hummer screens equipped with 6-mesh Rek-Tang screen cloth.

The screen oversize is roasted in one Edwards duplex furnace; the screen undersize, with concentrates from the flotation unit handling low-grade Cripple Creek ores, is distributed to seven Edwards duplex roasters. Each roaster will handle from 115 to 130 tons of ore per 24 hours.

The Edwards roasting furnaces are 115 ft. long by 13 ft. wide and each has an active hearth area of 1,495 sq. ft. A cooling hearth, 44 ft. long and 13 ft. wide, adjoins each roaster at the discharge end. Roaster hearths have a slope of 2 in. per foot.

Each roaster is equipped with 54 revolving rabbles which move the ore from the feed to the discharge end of the furnace. The rabble arms of the roasting

hearth revolve at a speed of 3 r.p.m. and those of the cooling hearth at 6 r.p.m. Each roaster requires 16 hp. for operation; ore passes through the roaster in the average time of 6 hours.

The rabble arms of the hearths are water cooled. Cooling water used per roaster amounts to 90 to 110 gallons per minute depending on the temperature of the hearth and the rate of feeding ore. The water enters the rabble arms at a temperature of from 23 degrees to 33 degrees C. and after leaving the rabbles, is sent to a cooling pond and from there is pumped to storage tanks for reuse.

Colorado Springs lignite coal of the following analysis is used for roaster fuel:

Water	percent	20.20
Volatile matter	"	54.65
Fixed carbon	"	19.75
Ash	"	5.10
Sulphur	"	0.30
Heating value	B. t. u. per pound	8,700

The fire box in use is of the Western Fire Box Co., type; it is a semi-gas producer and uses live steam. The consumption of coal in the producer at present ranges from 230 to 240 pounds per ton of ore roasted, and an additional 8 percent is required to generate the steam for the producer. Sizing of the ore before roasting has been found to reduce the coal required from 75 to 100 pounds per ton of ore when the roasters operate at a temperature of from 800 degrees to 900 degrees C. Lower roasting temperatures are used at times and under these conditions the saving of coal by sizing the ore is not so pronounced.

Extensive tests to determine roaster-stack losses were made in 1909. Gas velocities and gas pressures were determined and dust samples were caught in filter bags. At the beginning of these tests the loss of metal in stack-dust was found to be \$0.13 per ton of ore. This loss was reduced to \$0.04 per ton of ore by lowering the feed discharge point into the roasters, by providing better draft control and by choking the calcine discharge.

Temperatures are controlled by Brown indicating pyrometers; recording pyrometers are also in use for plotting temperature curves over long periods. Sulphur analyses are made each day.

The roasting of the basic ores may result in the production of two very undesirable compounds; namely, CaS and CaSO₄.

When CaS is present in the roaster calcine it consumes a large amount of cyanide in the leaching operation; it is also a reducing agent, and acting in this manner decreases the dissolution rate of the gold and at times decreases this rate to a point where gold ceases to dissolve. If silver is present in solution CaS will precipitate it and may prevent its final recovery.

Calcium sulphate, if present, crystallizes in pipe lines, launders, and tanks; it chokes filter and clarifier mats; it coats zinc-dust cloths and frames or settles out in zinc boxes; if the latter are in use; finally it coats zinc shavings or dust and thereby inhibits precipitation.

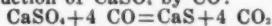
Due to the difficulties described, it is advisable to roast the ore so as to produce as small amounts of these two compounds as possible. It is difficult, however, to approach complete elimination of

the sulphur in the case of the basic ores. Considerable quantities of CaSO₄ are usually present in the calcines but troublesome quantities of CaS may be largely avoided.

A study of the behavior of CaSO₄ at elevated temperatures with certain fluxes has been made by Hofman and Mostowitach and most of the statements which follow on this subject have been taken from their report.⁸

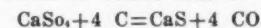
When calcareous ores containing metallic sulphides are roasted the lime is converted almost quantitatively to CaSO₄, providing sufficient sulphur is present. When the CaSO₄, however, is heated in the presence of either CO or C, which happens in roasting operations, a reduction of the CaSO₄ takes place as indicated by the reactions which follow:

Reduction of CaSO₄ by CO:



This reaction is slow below 680 degrees C., is rapid between 750 degrees and 850 degrees C. and is practically completed at 900 degrees C. The reaction also takes place without loss of sulphur.

Reduction of CaSO₄ with C:



These reactions are fairly rapid at 700 degrees C. and are completed at 1,000 degrees C.

At the Golden Cycle plant CaS is formed as noted in these reactions. The carbon monoxide is introduced into the roaster with the fuel and the solid carbon from the cars which deliver ore to the plant, as many of these cars are used for the transportation of lignite coal to the mines. In addition to the solid carbon, introduced as noted, additional carbonaceous cinder from locomotives is introduced into the cars en route to the plant.

This solid carbonaceous material if not completely burned during roasting of the ore forms a substance analogous to charcoal which readily precipitates gold in leaching operations. A roasting temperature high enough to completely burn this material also decomposes calcium and magnesium carbonates. The CO₂ gas liberated surrounds the ore particles for a time and prevents the oxidation of any CaS present to CaSO₄. Later during the roast the CaS is partly converted to CaSO₄ and CaO but some CaS remains in the final calcines. During leaching operations the small amount of CaS which goes into solution is soon oxidized or precipitated by zinc or iron salts. No satisfactory method has yet been found to prevent the formation of CaSO₄ during roasting or to remove it cheaply after it has deposited in various parts of the equipment.

The calcines drop from the cooling hearth of the roaster onto a reciprocating drag conveyor, 350 ft. long. The hot ore is moved along the drag by sheet-iron fins 34 in. long by 8 in. deep. The conveyor requires 16½ hp. for operation. The drag discharges the calcines to a conveyor belt which is specially prepared to handle hot material. The product when reaching this belt is at a temperature of about 85 degrees C. and contains 2.5 percent of moisture; the water is added as a spray between the drag and belt conveyors.

⁸ Hofman, H. O., and Mostowitach, W. The Behavior of Calcium Sulphate at Elevated Temperatures with Some Fluxes: Trans. Am. Inst. Min. Eng., vol. 39, 1909, p. 628.

The belt conveyor delivers the calcine to five 6-ft. Chilean mills for grinding. The Chilean mills are equipped with screens which have 0.0496-inch openings, and the grinding is done in cyanide solution.

The pulp from the Chilean mills is fed to blanket tables 16 by 12 feet in size for the recovery of the so-called "coarse gold." Each table is divided into four sections with a 3-inch drop between sections. The blankets used are either ordinary cheap part wool, fairly lightweight cotton, or corduroy; they are changed twice in 24 hours. The concentrates caught by the tables are removed by stretching the blankets over a rail and washing with cyanide solution which is delivered by a pressure hose. The recovery of gold by these tables amounts to between 22 and 40 percent of the total gold.

The concentrates washed from the blankets are directed into a small hopper-bottomed receiver and from there are fed to a small grinding pan. Mercury is added to the pan and the coarse free gold recovered by amalgamation. Since the amount of concentrates to be treated is small they are fed to the grinding pan at a slow rate and most of the minerals other than gold are ground fine enough by the millers to overflow from the pan. The overflow pulp is added to the general mill circuit.

The amalgam is periodically drained through a plug located near the bottom of the pan and after cleaning is squeezed through a cloth which resembles bed ticking. The amalgam is retorted and the mercury returned to the mill for reuse. Fouling of mercury during pan amalgamation of concentrates is negligible; the average yearly loss of mercury for the past three years amounted to 275 pounds.

The retort bullion is melted and cast into bars for shipment to the mint at Denver. The gold bullion varies from 920 to 940 fineness in gold and from 45 to 55 fineness in silver.

The tailings of the blanket tables and the overflow pulp of the grinding pan are delivered to a Dorr bowl classifier by centrifugal pumps. The classifier is equipped with a 12-foot-diameter bowl and is operated with liberal amounts of back-wash water added to the raking compartment; this results in the production of a sand practically free from slime. These sands amount to about 70 percent of the mill feed and contain from 22 to 26 percent of moisture. They are conveyed and distributed to the sand leaching vats by a rubber belt conveyor.

There are 11 leaching vats 50 feet in diameter and 7 feet deep; each will hold 600 tons of dry sand. The time of leaching varies from 6 to 8 days. The charges are drained and aerated four to five times during the leaching cycle for 8-hour periods.

The solution which overflows the tanks during charging and the solution drained during the first 48 hours of leaching flows into gold-solution storage tanks. From the storage tanks it is fed continuously to the precipitation presses.

After the 48-hour initial leaching period barren sump solution from the precipitation presses is used for leaching and washing purposes. These solutions upon leaving the leaching vats are either sent to the Chilean mills where the ore, as previously mentioned, is ground in cyanide solution or, if the solution is low grade, it may be pumped to one or two

of the last tanks for leaching purposes. The leaching with barren sump solution is followed by a final water wash.

The leached sand charge is removed from vats by sluicing with water into launders which lead to a common sump. From the sump the tailings are pumped in three stages to the tailings dump. A charge of 600 tons is removed from a vat in about 3½ hours by two men operating a 2½-inch hose equipped with a ¾-inch nozzle. Water at 200 pounds pressure is used.

The overflow pulp of the Dorr bowl classifier contains about 7 percent of solids. This pulp is thickened to 42 percent of solids in a 50-foot Dorr tray thickener, the overflow solution being returned to the Chilean grinding mills. The thickened pulp is discharged by four Dorreco diaphragm pumps and is delivered to a 38- by 24-foot continuous Dorr agitator. The overflow from this agitator feeds another continuous Dorr agitator 34 by 14 feet in size. This agitator discharges into a Dorr bowl classifier, the sand returning to the first classifier and the overflow slime feeding a 30- by 9-foot continuous Dorr agitator which in turn overflows into a 30- by 9-foot continuous agitator of the paddle type. The pulp leaving here is rethickened to 50 percent of solids in two 30- by 9-foot Dorr tray thickeners. The overflow solutions from these thickeners go to a clarifier and from there to storage precipitation tanks.

Thickened pulp from the Dorr tray thickeners is pumped to a 37- by 23-foot continuous Dorr agitator which is followed by either of two 30- by 9-foot mechanical agitators. These latter agitators feed the Butters filters.

The total time of agitation amounts to between 65 and 75 hours. The solids handled contain 4 to 5 percent 100-mesh laboratory screen oversize and about 84 percent minus 200-mesh material.

The filter equipment comprises two Butters intermittent type of filters each equipped with 87 canvas-covered 5- by 9½-foot frames. The filters are fed from the agitators as noted, the agitators being filled alternately.

The slime cake is given a barren-solution wash which is followed by a short water wash. The tailings from the filter presses contain 0.0276 ounce of gold per ton of which \$0.0245 is soluble gold. The filtered solutions pass to a clarifier and from there to the precipitation presses.

Clarification at this plant is best effected by means of the Hardinge sand clarifier; this applies to solutions from the slime plant before precipitation. The clarifier used is 30 feet in diameter and has a capacity of 3,000 tons of solution per day. It is equipped with a sand filter bed which is kept clean by a spiral scraper that discharges the sludge in a manner similar to that of an ordinary thickener.

Zinc shavings contained in zinc boxes were formerly used for the precipitation of gold from cyanide solutions. Since 1929, precipitation has been effected with zinc-dust and Merrill presses have been used for the recovery of the precipitate. The solutions are passed through Crowe vacuum equipment before precipitation. The barren solution, which contains 0.02 ounce of gold per ton, flows into sumps and is used as wash solution for both sand and slime treatments.

At times it has been found difficult to satisfactorily precipitate the values from the cyanide solutions derived from the

treatment of roasted Cripple Creek ores. The factors which follow have been found to influence the results of precipitation: (a) Type of ore, whether basic or otherwise; (b) quantities of sulphates and sulphides formed during roasting operations; (c) rate of feed to roasters, and (d) temperature used in roasting.

The addition of lead acetate, in amounts depending upon conditions in roasting, has been found at times to be beneficial.

When zinc shavings were used for precipitation the zinc boxes were cleaned up by removing the contents from the first or first and second compartments of the seven compartment boxes. The precipitate was treated with sulphuric acid in a tank. When most of the zinc had dissolved, the sludge was dropped into a small air-tight tank and from there forced by air pressure into a small clean-up press. The gold sludge was washed in this press with hot water for the removal of zinc sulphate. The press was then dismantled, the sludge cake removed, and charged into a muffle type furnace. The muffle was brought to a red heat and most of the lead and any remaining zinc oxidized. The roasted product was mixed with flux in the proportion of 100 pounds of residue to 84 pounds of flux. The flux contained 28 pounds of silicious sand, 28 pounds of bicarbonate of soda, 14 pounds of borax glass, and 14 pounds of fluorspar. The charge, contained in graphite crucibles, was melted in oil-fired tilting furnaces.

When the change from zinc shavings to zinc-dust was made the sulphuric acid treatment was discontinued. The precipitate, after removal from the Merrill press, is now put into iron pans and mixed, while wet, with sodium nitrate in the proportion of 125 pounds of precipitate to 25 pounds of nitrate. The pans are placed in a furnace equipped with cast-iron muffles and the charge is heated to a red heat. The heating results in the drying and sintering of the charge which may be subsequently handled without loss of dust. The bullion is then mixed with the sand-borax glass-soda nitrate-fluorspar flux, previously noted, and charged to a fire-clay tile lined Monarch-Rockwell type of furnace for melting.

The recovery of gold at this plant has been found to be affected by the conditions which follow:

(1) Very careful attention to the details of the roasting of basic ores is necessary.

(2) The complete removal of free gold particles of any appreciable size by blankets, or some other means, is essential if tailings of low gold content are to be obtained within reasonable time periods.

(3) The consumption of chemicals, the formation of calcium sulphate and other cementing compounds and the amounts of deleterious sulphides produced vary with the types of ores and with the manner of roasting.

(4) Recovery of gold has at times decreased even when the roast appears satisfactory, and this condition is apparently due to the accumulation of zinc salts in the cyanide solutions. Sufficient amounts of sulphides are usually present in the calcines to precipitate injurious soluble zinc; but when the recovery decreases, the addition of soluble sulphides is in general beneficial.

(5) As a general condition, both sand and slimes are difficult to wash. At the beginning of washing operations satisfactory displacement of gold-bearing solution apparently takes place but later in the washing operation the dissolved gold appears to be removed chiefly by diffusion rather than displacement. It has been found that the use of what might be termed "excessive barren washes" for the removal of dissolved values in both sand and slimes is advantageous.

(6) In a plant of this character mechanical leaks of ore or solution and waste of values of any kind should be very carefully watched.

Mechanical Loading in Indiana

(Continued from page 22)

a loss of employment to many men and a total loss of the mining property to the coal company.

Mechanical mining adopted has protected both company and employee from such losses, reduced the hazard of mining, quick removal of coal has bettered roof conditions, reduced the cost of production, is a protection in the keen competitive ruinous markets. Better working conditions have made better, more efficient, skilled, satisfied and safer workmen. Resulting in the successful operation of a mining property marked for abandonment.

We are of the opinion that mechanical mining is the program of future mining to be improved and advanced with time. That both parties, employer and employee, will participate in such improved arrangement. The above belief was the opinion of the recent U. M. W. of A. convention in Indianapolis when the convention went on record as favoring such advancement but believing the employee should participate in such advantages.

The buyer of coal will also participate in any advancement of mechanical coal production and distribution through better prepared and cheaper fuel. Therefore the futility and absurdity of any program that prevents programs in the advancement of mechanical mining when all three parties interested are benefited.

New mines established with the thought of mechanical mining have an advantage, but successful operation of old mines mechanically can be practiced by proper selection of machinery and careful attention to the operation. Machinery will not successfully produce coal unless given proper attention and opportunity. There are no secrets in successful mechanical mining, just plenty of hard work and from the head of the operation to the bottom.

Two Years of Holmes Safety Association Work in Iowa*

By W. H. FORBES †

IOWA is in the same class in coal production with Tennessee, Missouri, Oklahoma, Montana, and Utah. During the past 5 years, coal production in Iowa ranged from 3,759,545 tons in 1928 to 4,002,955 tons in 1932, the peak being attained in 1929 when 4,337,013 tons were mined.

The coal-mining industry of Iowa, in conjunction with the Holmes Safety Association and other interested agencies, made a noteworthy contribution to the mine-safety movement during 1932 through its efforts to solve various problems in connection with the occurrence of accidents in and around coal mines.

The accident rate at Iowa mines increased yearly from 1919 to and including 1931, when the matter was brought to the attention of the Iowa Mine Managers' Association at their meeting in September, 1931. It was pointed out that the number of accidents per million dollars of pay roll had increased 344 percent between 1919 and 1931, and the members of the association were requested to take immediate action to remedy the situation. The accident record presented at that time is given in table 1.

TABLE 1—Increase since 1919 in accidents reported in Iowa per million dollars of pay roll

Year	No. of accidents	Ratio of increase-index
1919.....	165	100
1920.....	193	117
1921.....	201	122
1922.....	243	147
1923.....	258	156
1924.....	257	156
1925.....	266	161
1926.....	342	207
1927.....	326	198
1928.....	578	229
1929.....	436	264
1930.....	467	286
1931.....	568	344
1932.....	555	(A decrease of 8 percent under 1931)

Following the report the mine managers voted unanimously to sponsor a joint meeting of coal operators, officials of District 13 of the United Mine Workers of America, state mine inspectors, and others interested, to consider advisable methods of bringing about a reduction in the number of injuries in and around Iowa coal mines; the meeting was held on December 16, 1931, in the office of the Iowa Coal Operators' Association, Des Moines, with all the organi-

zations represented. After a full discussion of the accident problem it was decided to enlist the aid of the United States Bureau of Mines in the organization of a state council and local chapters of the Holmes Safety Association.

It was realized that successful accident prevention can be accomplished only through cooperative effort and that before men can cooperate effectively they must first sincerely believe that what they have set out to accomplish is worthy of effort and must agree on the methods of carrying out a predetermined line of action.

The coal operators and the mine workers naturally realized that they had much in common in furthering the cause of accident prevention. The operators comprehended that an investment in carelessness and incompetence would pay only dividends of sorrow, pain, embarrassment, or financial loss; the mine workers understood that an investment of intelligent thought and action in accident prevention, which represented no financial outlay on their part, would be very likely to pay real cash dividends in the form of the dollars and cents that otherwise might be lost by interrupted earning power and the expense resulting from almost any injury. They also knew that no mine worker could possibly profit by an injury and that many mine workers are now employed at relatively low remuneration because of disabling injuries.

A state council of the Holmes Safety Association was formed in Des Moines, Iowa, during the latter part of January, 1932, by representatives of the Iowa Coal Operators' Association, officers of District 13, United Mine Workers of America, the State Mine Inspection Department, and the Bituminous Casualty Corporation, who worked together wholeheartedly in the cause of accident prevention and cooperated fully with the

United States Bureau of Mines. Since the organization of the state council, 18 local chapters and 1 district council have been organized throughout the state. During the several months required to complete the organization the local chapters, the officers and members of the state council gave unstintingly of time and effort in connection with the work; they were never too tired or too busy to accompany a representative of the Bureau of Mines to the various mining communities where safety meetings were held.

Twenty-four mining companies, employing approximately 5,000 men, with an annual production of 2,647,000 tons of coal, are in the Holmes Safety movement in Iowa.

Most of the safety chapters meet regularly one night each month, especially in winter; some chapters dispense with meetings in summer, while others hold outdoor picnics for the members and their families. The attendance at chapter meetings varies with the distance of employees from the meeting place, and the degree of cooperation manifested between employers and employees in an attempt to make the meetings interesting and instructive is noteworthy. Experience in Iowa, as well as in other states, indicates that for the best results safety meetings must be made interesting enough to attract attendance of employees.

The Iowa State Council of the Holmes Safety Association sponsored a statewide mine safety contest during the fiscal year ended July 31, 1933. The contest aroused considerable enthusiasm among the various Holmes Safety chapters, and the results obtained in reducing accidents at a number of the mines were most gratifying.

Comparative accident data compiled in table 2 for several of the mining operations for 1931 and 1932 give a fairly good idea of the progress made.

It will be noted that substantial progress in accident prevention was made by the mining companies listed in table

TABLE 2—Comparative accident data for several mining operations

Company	Tons mined		Man-hours worked		Lost-time injuries		Accident-frequency rate		Accident-severity rate			
	1931	1932	1931	1932	1931	1932	1933*	1931	1932	1933*		
X.....	75,080	75,258	206,960	205,890	70	31†	338.90	150.56	130.62	37.01	3.80	1.60
Y.....	188,651	189,938	484,628	391,000	86	47‡	197.89	120.20	34.134	3.81
Z.....	121,485	119,931	336,550	371,344	80	61§	237.70	164.26	6.22	2.55

* First 10 months.

† 55.70 percent reduction in lost-time injuries during 1932 compared with 1931.

‡ 45.30 percent reduction in lost-time injuries during 1932 compared with 1931.

§ 23.75 percent reduction in lost-time injuries during 1932 compared with 1931.

* Published by permission of the director, U. S. Bureau of Mines. (Not subject to copyright.)
† Associate mining engineer, U. S. Bureau of Mines, Vincennes, Ind.

2. A number of other mining companies also made considerable progress in reducing lost-time injuries; in fact, whenever the Holmes Safety chapters functioned properly—that is, where men and management cooperated to make the safety meetings a success—material reduction in the number of lost-time injuries resulted. That this progress is continuing is indicated by the fact that only 3 men were killed in the mines of Iowa during the first 10 months of 1933 while 17 were killed during the same period of 1932. For the first half of 1933 985 injuries were reported, a reduction of 162 from the 1,147 reported for the same period of 1932.

The accident-frequency and severity rates for 1932 for 95 bituminous coal mines in 14 states were:

Accident-frequency rate.....52.219
Accident-severity rate.....9.029

The accident-frequency and severity rates for a few mines participating in the Iowa State-wide mine safety contest were:

Mine	Accident-frequency rate	Accident-severity rate
A*	160.739	2.451
B.....	102.115	2.933
C.....	111.003	3.533
D*	67.059	9.588
E.....	147.166	2.470

* Mine A won the award for the lowest accident-severity rate, while mine D won the trophy for the lowest accident-frequency rate.

Mine officials, mine inspectors, and mine workers state that since the inception of the Holmes Safety Association in Iowa there appears to be much better understanding of the principles of safety and the daily observance of these principles by foremen and workers. Unquestionably, safety education is necessary not only in coal mining but in all industrial work because each person's safety depends upon the observance of safety precautions by almost every other person, and in general this obligation and responsibility cannot be passed on to someone else. All must assume responsibility for personal safety, but some have greater responsibility in regard to accident prevention than others, as employers and their representatives, and they should be especially familiar with the principles of safety and insist upon their observance.

The following is an abstracted paragraph from a man who for the past 14



Safety Shoes have done much to eliminate minor foot injuries. (H. Childs & Co., Inc.)

years has been employed as a mine safety inspector in Iowa, giving some of his impressions as to the result of the recent safety work in Iowa's coal mines, largely through the Holmes Safety Association:

"Since this movement was started, with the cooperation of the Bureau of Mines, there has been a distinct change for the better in the attitude of both the workers and managers toward efforts in promoting the prevention of accidents. Especially is this true in the case of the men in regard to timbering their working places. Before the organization of Holmes Safety chapters in this state about 75 percent of all the fatal accidents were due to falls of roof or coal at the face. During the past 10 months of this year, we have had only one fatal accident due to falls at the face, which indicates to me that the educational work of the safety movement is making progress with the worker at the face, as I know from my experience as a safety inspector in this field for the last 14 years that the general roof conditions are, if anything, worse than they were a few years ago.

"Another thing that has been forcibly brought to my attention is that the best results are being obtained at the mines where the Holmes Safety chapters are organized and functioning properly. The records at these places are much better than where there are no chapters, or where the chapters have been installed, but are not functioning."

Unless management and workers are thoroughly "sold" on the idea of safety and the benefit that will be derived from well-attended and well-conducted safety meetings, the problem of securing good attendance will be perplexing. However, the enthusiasm displayed by the men and women at well-conducted Holmes Safety Association meetings is ample proof of their worth.

Interest in safety should start with the highest official of the operating company; without this key man's interest and sincere cooperation a safety campaign can be conducted successfully in only a relatively few instances. Any plan that contemplates the prevention of accidents calls for the united effort of employer and employee; with such effort a safety campaign cannot fail; without it, it cannot succeed.

Occasionally a coal-mine management has an erroneous viewpoint. In effect it says "I provide work, wages, equipment, and adequate ventilation in accordance with all legal obligations. Men apply for work who claim experience. So far as can be determined I judge them to be competent. I instruct them as required, and assign them to jobs. If, then, they are injured because of the violation of safe procedure, the moral responsibility is theirs. I believe in carrying on a reasonable amount of educational work. I am concerned with the burden of cost that industry must bear and I regret the injury of employees, but the responsibility and initiative for improvement should rest with the employees." In the sense that more than one person shares responsibility, it is true that the employee is responsible. The employer, however, must accept the lion's share of responsibility for accidents in industry, including coal mining, because in the final analysis it is he who creates the working conditions, offers employment, selects and assigns workers, and initiates the entire series of events included in the operation of any industrial enterprise including coal mines.

According to the State Mine Inspection Department the record made during the first half of 1933 of working without fatal accidents is the first made by the mines of Iowa for a like period since 1896.

Unquestionably the safety campaign in Iowa sponsored by the Holmes Safety Association during the past year and a half has materially reduced both fatal and nonfatal accidents in and about the mines of the state. In other words, the united efforts of coal operators, mine workers, state mine inspectors, and representatives of the Bituminous Casualty Corporation may be considered to have been responsible for the saving of at least 12 lives and the prevention of much human misery during the first 10 months of 1933 as compared with the same period for the previous year. Hence many mine workers in Iowa are enjoying



Speaking Diaphragm Facepiece for Gas-Masked Crews. (Mine Safety Appliances Co.)

the blessings of good health and sound, uninjured bodies because of this great work of accident prevention which the members of these organizations have so splendidly pursued.

The accident-reduction work in Iowa did not cause a single mining company to spend an extra dollar, add to production costs in any way whatsoever, or cause any mine worker to do extra work or even impose any additional hardships for the privilege of enjoying the benefits that naturally obtain as a result of greater safety in mining.

Every mining operation, no matter how small or how large, should have a Holmes Safety organization. The mine worker should be educated by talks on general safety and specific working problems in safety at monthly meetings. A sound safety program can be initiated, put into effect, and maintained in working condition only through cooperation of employees and officials; however, management must "sell" the idea of safety to employees, and then take the necessary steps to keep real safety in actual effect at all times. From humanitarian and economic viewpoints accident prevention is at all times worthy of a place among business activities and will always win favor and gratitude from right thinking employees.

THE 30 HOUR WEEK —

and the Mining Industry

AT THE annual December meeting of the American Mining Congress, considerable discussion ensued as to the attitude of the mining industry, generally, in relation to the bills before Congress, proposing a law to enforce an arbitrary 30-hour work week for all industry.

The Connery Bill, which has made the greatest progress in Congress of any of the 30-hour bills, is now before the House Labor Committee, and many representatives of government and industry have appeared before the committee with their views both for and against the proposal.

The American Mining Congress, through its secretary, J. F. Calbreath, made the following statement to the committee on February 21:

"In view of the short time available, and to insure brevity, I have prepared what I desire to present and to still further condense, I will state briefly the points to which I call your attention:

"1. To the extent that labor-saving devices reduce the hours of labor required to supply needs of consumers, frequent adjustment is necessary to the end that hours of labor shall be a little more than enough to meet consumption demand.

"2. That the National Recovery Administration has full power to do all things proposed in the Connery Bill and that it is unwise to tie the hands of the President in adjusting hours and wages to meet conditions, as they now are and as they may develop.

"3. That any increase in production costs which opens our markets to importations instead of increasing employment will put an end to employment. Higher wages and shorter hours are required under the National Recovery Act. Foreign goods on a competitive basis before this act was enacted now have at least a 25 percent advantage over our domestic producers.

"4. That it is unwise, during times of depression and unsettled conditions, to make laws which might be entirely unsuitable during the prosperous time which we hope will prevail in the near future.

"5. That a 30-hour week in 1929 would have limited our production to about five-eighths of the goods which were consumed during that year and this shortage would have so enhanced prices as to work great hardship upon consumers.

"The American Mining Congress is in full sympathy with every effort looking toward re-employment. It believes in the shortest number of working hours and in the highest wages which a proper conduct of business will permit. All business is carried on for profit. Its goods

must be sold for more than their cost. Any rule which makes cost in excess of market return dooms that business to failure and its employees to a loss of jobs. We must oppose any plan which increases production costs which does not at the same time anticipate an increased market demand. Outgo and income must be balanced.

"One of the greatest virtues of the National Industrial Recovery Act lies in the discretion which is lodged in the President to negotiate with business leaders in order that restrictions necessary to accomplish the purposes of the act may be worked out between the administration and business leaders. It offered to business temporary relief from the restrictions of the anti-trust laws. It proposed to permit operators to so limit production as to prevent over-supply in the market and the consequent low-cost prices which an over-supply creates. These negotiations are more difficult, more extended and more one-sided than was anticipated. The power, however, exists in the President to do any and all the things which are provided for in the present bill whenever it shall be found expedient to exercise such authority. The counterpart of that provision and a very important part, is that the authority is given to the President to quickly amend the rule whenever it is found that a previously adopted rule is working hardship upon business operations. It may also be anticipated that in the not distant future, when business conditions shall again become normal, that restrictions which at this time are perfectly proper, can be modified as the necessity has been removed by a greater demand for consumption of manufactured articles.

"We do not believe it is feasible to establish a rule which can operate uniformly in the various parts of the country and upon lines of business entirely different from each other. We do not believe it is wise to make laws for conditions of depression, which may be found entirely impracticable during times of business prosperity.

"We must object to any plan which because of the increased production cost prevents the sale of our products in competitive markets. We believe it is unwise to freeze into the industry by

law such a limit of hours of service as will make impossible the production of enough goods to meet consumption requirements during normal times. During the year 1929 the average number of employment hours per week of all wage earners in the manufacturing and mechanical industries of the United States was 48.4. The average number of persons so employed was 8,836,743.

"To have produced the same amount of commodities on the 30-hour week basis would have required 14,141,989 workers, a difference of 5,000,000 workers. At that time the total number of unemployed in the manufacturing and mechanical industries in the United States according to statistical reports was approximately 1,000,000 men. Counting the total employment of all workers attached to industry, there would have been a shortage to the extent of 35 percent of the goods produced and consumed during that year. During that year exports and imports were just a little above normal. No excessive surplus of commodities was accumulated; consumers demand kept pace with production and unemployment was at a minimum. Production was just far enough ahead of consumption to protect consumers against unreasonable prices. This estimate covers \$70,000,000,000 of and the greater part of the merchandise which reached the consumer through the channels of commerce and represents as nearly as may be, the actual consumption of goods in a normal year.

"We submit to this committee the question, 'What would have happened to the consumers if only five-eighths of that production had been available? What worker would be willing to go hungry and bare for 4½ months each year in order that he might have two hours of daily additional leisure?' Conditions of scarcity would not only make impossible a full supply of commodities to all workers but would enormously enhance the price of those commodities to all consumers. Prices always enhance when supply is less than the demand. A proper balance must be maintained between production and consumption. Production is impossible without a market to absorb its output. We will gladly approve a 30-hour week if imports are so restricted as to provide a home market at the increased cost of production. Section 3(e) of the Recovery Act gave promise of relief against foreign imports which must necessarily absorb our markets at the additional cost made necessary under the Recovery Act. Thus far this clause has been a dead letter. Complaints and petitions have been on file for months without relief. In one industry more than a year's total consumption of the

United States has been imported, since an appeal for protection against such imports was filed with the Recovery Administration authorities. Not only will it be necessary to protect against imports but home consumption must be brought up to a proper level, before production at the higher cost will be possible.

"The perfect balance between supply and demand will be difficult to establish but surely it would be unwise to so limit production by law as to create a scarcity of the necessities of life. We are fully in accord with the theory that wherever mechanical equipment lessens that time required to produce the country's needs, that hours of service should be gradually reduced, but it would be dangerous to freeze any particular rule into the law which could not be changed whenever conditions show such change to be essential. We fully agree with the statement made by the able Secretary of Labor before your committee, that it would be foolish to 'freeze into the law' power already existing in the executive.

"Leaders of industry insist the eight-hour day is a necessary part of their business operations. In many lines of industry plant layouts and schedules have been constructed around the eight-hour day. To modify these layouts over night would create a chaotic condition. Irrespective of the wages paid the eight-hour day is a necessary part of the industrial plan. Wages are not a big factor so long as they remain competitive. As a rule the employee would prefer to work four eight-hour days rather than five six-hour days. While this may not be universally true, I believe it to be true, that it will be very much to the benefit of labor and capital, both employers and employees, that these restrictions should be worked out through the codes for which unlimited authority now exists.

"The restrictions imposed under the 'Connery Bill' will be particularly burdensome to smaller gold mining operations of the West. We speak of them as gold mining operations, in fact they are gold-hunting operations. You gentlemen of the committee who are familiar with the conditions under which prospecting is carried on can readily see the danger of the handicaps which this bill will impose. Prospectors by the thousands are working on individual small enterprises way up in the mountain peaks at elevations from 9,000 to 12,000 ft. above sea level. The equipment is of a very temporary character. They are searching for a gold vein which may or may not exist. Until such discovery is made, and until such ore body is thoroughly explored, it would be wasteful in the extreme to provide permanent living quarters for any large number of men. A few men driving a tunnel or sinking a shaft with a shack for living quarters, doing their own cooking, not leaving their occupation more than once per month, working eight hours a day and seven days a week. These enterprises have no immediate earning power.

"Many of them, perhaps most of them, fail entirely to find the coveted ore bodies. Frequent legislative efforts are made to prevent these enterprises from securing from the public the money necessary to carry on because of their speculative character. And yet, these enterprises have preceded practically every gold discovery in the United States. It is from the few of these enterprises that are successful that we must look for our future gold supply.

Announcement

For several years The American Mining Congress has been promoting a movement for increased efficiency in coal operating practices through our committees on mechanization, recommended practice and standardization. All of this has been under our coal division, of which Mr. R. L. Ireland, Jr., vice president Hanna Coal Company, is chairman, and Mr. A. J. Musser, vice president Clearfield Bituminous Coal Corporation, is vice chairman.

These activities have been carried on more or less independently of each other, but they are now combined under one head as a branch of the operators section. The reason for this reorganization is to provide for an intensive study of operating questions which the coal code has already and will continue to raise.

The personnel of these committees is representative coal men and they are divided into the following three groups. Each group consists of 10 main committees and about 25 sub-committees.

Operating Research:

A research to discover what new methods or practices are being tried, their degree of success, and the class of mines or conditions to which they can be applied.

Recommended Practices:

Recommendations covering methods and practices which have been found by experience to produce the best results.

Standardization:

Standardization of certain classes of equipment to provide for greater interchangeability, to reduce the stocks of supplies and lower repair costs.

THE AMERICAN MINING CONGRESS.

"I am sure you gentlemen will agree with me that rules which may be thoroughly acceptable and proper for our Eastern coal mines would be entirely improper and unworkable for these gold development enterprises. And, therefore, that such control should be left with the National Industrial Recovery Act which is given certain powers of discretion with reference to matters of this sort. Section 2 of the Connery Bill provides that the same wages be paid for the shorter week as is now being paid for the longer week. Aside from the questionable constitutionality of this provision, we fully agree that a living wage must be paid to our workers. We insist that if conditions are such as to prevent all employment, this rule should not be applied. The coal industry of the United States has been unable to meet the competition of oil and gas. Here for many years coal requirements have decreased. As a matter of conservation, oil should be used for those higher purposes for which it is particularly adapted and coal should be the fundamental producer of power and heat. Oil and gas require comparatively few men for production. They add little to the earnings of railroads, their competition with coal is so keen that any additional burden put upon the cost of coal production will lead to unemployment rather than to increased employment. Authority for regulations along this line is already fully established in the National Recovery Act. It would seem dangerous to add a restriction which would further decrease the

power of the coal industry to meet this competition.

"Under the third section of Mr. Connery's Bill, provision is made for an equal representation of labor with employer upon the code authorities. High wages and short hours can only be possible under effective management. Effective industry and the mass production which has brought about cheap production cost has introduced a new element since the days when capital and labor were the two elements involved. Today, whether we approve it or not, capital is at a long distance from the worker. The new element of management, executive control, has been introduced through which these great economies have been accomplished. Labor, under Section 7 of the National Recovery Act has been given unusual advantages of business control. We believe it will be very unwise to allow labor a voice in the affairs of management. I thoroughly believe in the right of labor to organize. I insist that both capital and labor being so organized must be held responsible for their acts. The National Recovery Act has been hailed as the new Magna Carta of the working man, the NIRA has brought verity to the age-old dream of labor."

"Under Section 7 of the NIRA organized labor has been given indirect but almost unlimited control over industrial

(Concluded on page 40)

MINING EVENTS

Copper

THE proposed code of fair competition for the copper industry, hearing for which will be held March 12, would permit regulation of copper production, by voluntary agreements by members of the industry, and the withholding of surplus stocks from the market. It would also permit allotment of volume of current production and a minimum sales price plan. These proposals are because large surplus stocks of copper exist at present in this country and further unrestricted over-production would aggravate that condition and consequent market depression.

The proposed code, submitted by the United States Copper Association, claiming to represent 95 percent of the industry had a public hearing beginning at 10 a.m., Tuesday, February 27, 1934, in the Auditorium of the Department of Commerce Building, Washington, before Deputy Administrator H. O. King.

The code fixes a maximum work week of 40 hours, averaged over a three-months period, and including office workers. It fixes an eight-hour day. Emergency maintenance and repair workers may exceed these hours, but shall be paid time and one-half for overtime. Employees engaged in transporting men to and from working places or completing the handling of material in transit, hoist, powerhouse or pump men may not exceed 56 work-hours per week. It is provided that the eight-hour per day limit shall not apply in the case of operations with three shifts in a 24-hour period where at the time of change of shift it is necessary for men to work more than eight hours in one 24-hour period. It is stipulated that in the case of shutdown properties or other special situations requiring modifications of these work hour limitations, the Administrator on request of the member of the industry, and after investigation, may make special rulings and modifications.

Minimum wages proposed are:

Eastern Wage District—Surface labor 30 cents per hour. Underground labor 35 cents per hour.

Southwestern Wage District—Surface labor 30 cents per hour. Underground labor 38 cents per hour.

Northwestern Wage District—Surface labor 35 cents per hour. Underground labor 41 cents per hour.

The minimum wage for office workers is \$15 per week.

With regard to company towns and stores, a section of the labor provisions reads: "Employees other than maintenance or supervisory men, or those necessary to protect property, shall not be required as a condition of employment to live in houses rented from the employer. No employee shall be required as a condition of employment, to trade at the store owned or specified by an employer."

The production and sales article is:

"The existence in the United States of large surplus stocks of copper has created a condition under which the selling price of the product of this industry has been

unduly depressed. Further unrestricted over-production can only result in further accumulations and an aggravation of the foregoing condition.

"Accordingly, for the purpose of conserving a natural resource of national importance; of cooperating in the highest possible degree in the National Recovery Program particularly with reference to employment; and of bringing about a sound and stable basis for the industry as a whole, the members of the industry, the holders of stocks of copper, and others interested may enter into voluntary agreements for the attainment of any of the following purposes, subject in each case to the approval of the Administrator and the Code Authority, which

per is the major production from operations which also do or might produce lead, zinc, gold, silver or other materials, the question of which code shall govern is to be referred to a "co-ordination committee." Any member of the industry whose operations raise such a question may file with the Code Authority a statement of fact and of preference as to the code that member would prefer to be under. Also, from time to time if conditions change members shall be entitled to file such statements of fact and preference as to change of a portion of their operations from the jurisdiction of one code to that of another.

The trade press reports that:

"Continued quietness has prevailed in the domestic market where little if any business is being conducted.

"Foreign markets have contributed their share of activity, domestic sources reporting a good demand from abroad at prices that averaged 8.25c c.i.f. European base ports. Recent purchases are estimated at around 22,000 tons, which certainly reflects heavier demands than have been reported here. The unsettled economic situation, the war scare and a well sustained increase in business generally, are said to be responsible for the large foreign demands recently."

Bituminous

THE conference scheduled for February 21 in Washington of employers and employees operating under the bituminous code with NRA has been postponed again, the necessary data on wages and hours not having been ready for presentation by NRA. It was planned to set up committees during the latter part of the week to consider disputes arising between operators and miners and it was expected that the conference might get under way the early part of the week beginning February 26.

The anthracite code was still in a state of suspension after a series of meetings during the week between operators and labor leaders. The discussions were adjourned February 21 to be resumed February 26. The question of hours is the moot point to be decided but it appears that a compromise on a 40-hour week will be made. Labor leaders are stressing the need to absorb thousands of unemployed and for this reason are pressing for a shorter week. The operators point out that the miners look for the longer hours in the busy winter season to counterbalance the lax periods during the summer. In the meantime, small groups are conferring with Deputy Administrator Wayne Ellis to formulate minor clauses to be written into the code.

The National Bituminous Coal Board, after a public hearing in the Department of Commerce Auditorium, ruled that the United Mine Workers, rather than the Progressive Miners of America, should represent the employees of the Peabody Coal Company in Southern Illinois. The opinion was unanimous. The hearing was held on an appeal from the decision of the Divisional Coal Labor Board for Division II of the industry

Mines Bureau Transferred

President Roosevelt has completed the transfer of the Bureau of Mines from the Commerce to the Interior Department. He informed Congress of the action in a 50-word special message.

When the President consolidated various departments soon after taking office, transfer of the Mines Bureau to the Interior was inadvertently overlooked. Later it was placed under jurisdiction of Secretary Ikes, but its funds were left under control of the Commerce Department.

The order sent to Congress said: "Pursuant to the provisions of section 16 of the act of March 3, 1933, as amended by title 3 of the act of March 20, 1933, I am transmitting herewith for the information of the Congress an executive order transferring the Bureau of Mines from the Department of Commerce to the Department of the Interior."

agreements shall only be binding on members parties thereto:

1. "To regulate copper production in the United States with due regard to consumptive demand, the liquidating of surplus stocks and the necessity of maintaining employment in the industry at the highest possible level.
2. "To withhold, in whole or in part, surplus stocks from the market during the present emergency period.
3. "To regulate, curtail and allot the volume of current production in such manner as shall be agreed upon by the parties participating in such regulation, curtailment or allotment.
4. "To provide a plan involving a minimum sales price with due regard to cost of production and in connection therewith a plan for the regulation and allocation of sales; and
5. "To take such other steps by negotiation and mutual consent as may be deemed necessary for the accomplishment of the purposes hereinbefore set forth."

Where there is a question whether cop-

regarding the status of the employees at the Peabody mines. The single point involved concerned the right of contending labor unions to represent the employees on the matter of wage agreements. The National Board concluded that the U. M. W. had the contract with the mine owners and should represent the miners. Counsel for the Progressives contended that their union was truly representative of the Peabody miners and that the question of the validity of U. M. W. contracts was not involved. The hearing was called to order by Deputy Ellis who turned over the proceedings to John Carmody, chairman of the Board of six impartial presidential appointees. The other members were J. D. Acuff, John A. Lapp, Charles B. Barnes, T. A. Hogan, and Mead Johnson. The case for U. M. W. was presented by Judge Warrum, its general counsel, and President Sneed of District No. 12 of Illinois. The case for the Progressive Miners was handled by Claude Pearcey, president of the union, and George Dowell, its general counsel.

Secretary of Labor Perkins has appointed a committee to investigate labor and unemployment conditions in the Panther Creek, Pa., anthracite mine section. The committee is headed by Prof. Carter Goodrich of Columbia University and includes David J. Price, mining engineer formerly with the Bureau of Mines, and Hugh S. Hannah, editor of the monthly *Labor Review* of the Department of Labor.

For the second time this year, anthracite production far exceeded the highest week's output in either 1933 or 1932. The output for the week ended February 17 totaled 1,655,000 tons and was slightly below the high production of 1,683,000 tons recorded during the week ended January 13. These figures compare with the high weeks during 1933 and 1932 of 1,398,000 tons and 1,467,000 tons respectively. Production during the week ended February 17 compared with 1,222,000 in the previous week and 1,279,000 tons in the corresponding week of 1933.

The total production of bituminous coal as estimated by the Bureau of Mines for the week ending February 17, amounted to 8,015,000 net tons. Compared with production of preceding week, this is an increase of 295,000 tons, or 3.8 per cent. Production during the corresponding week in 1933 amounted to 7,520,000 tons.

The total production of soft coal during the current coal year to February 17, is estimated at 302,056,000 net tons, as compared with 265,894,000 tons during the corresponding period in the preceding coal year, showing an increase of 36,162,000 tons.

A proposed planning board for the fuel and energy industries has been discussed by representatives of the Federal agencies interested in oil, natural gas, water power, anthracite and bituminous coal, at two informal conferences sponsored by William H. Davis, Deputy Administrator, NRA. It was the feeling of all present that this planning board could perform a very necessary function in the consideration of problems cutting across two or more of these industries, with particular reference to the rationalization of the competition among the various energy sources. This treats of a subject discussed in the report of the committee headed by Charles O'Neill, to the National Bituminous Coal Industrial Board on January 20.

Both meetings were general in character, though certain specific matters were agreed upon, namely, (1) that the Central Board ought not consist of more than seven members, (2) that its functions should be solely *investigative and advisory*, (3) that problems should be referred to the Central Board either by the Code Authorities or by contact men appointed by them, and (4) that the Central Board should only report its findings after contacting the proper Federal agency for detailed information.

Proceedings are still in a tentative state, although at the end of the second meeting a motion was carried, suggesting that Mr. Davis appoint an organizing committee of three men to draft a definite plan covering (1) the type of organization necessary, (2) the composition and duties of the Central Fuel and Energy Planning Board, (3) the source of the Board's authority, and (4) the nature of the Board's contacts with the industries, Code Authorities and the various Federal agencies.

present plan, the Government would lose the benefit of special mine price and the 20 per cent freight concession, which are applicable only to replacement anthracite purchased by the Government of Anthracite Institute operator members.

According to a statement received by the United States Bureau of Foreign and Domestic Commerce from Consul General Samuel W. Honaker, Glasgow, Scotland, the exports of coal to the United States in 1930 amounted to 118,084 long tons; in 1931, 70,040 tons; in 1932, 103,636; and in 1933, 64,090 long tons. It is safe to say that this is anthracite. According to the value submitted by the Consul, the 1930 exports to the United States averaged \$10.01 per long ton; in 1932, \$8.64, and in 1933, \$8.27 per long ton. The Consul adds that the average freight rate during 1933 for cargoes to the United States was 7 shillings (\$1.70), if the ship had to bear the cost of unloading, and 6 shillings (\$1.46), if the ship did not bear the unloading cost.

It is further stated that total exports from Scotland to North and Central America amounted to 529,990 long tons; deducting the 103,636 tons which were exported to the United States, it is found that apparently 426,354 long tons were consigned to Canada and Newfoundland.

According to official British statistics of exports in 1932, Great Britain exported to Canada, 1,615,176 long tons and by deducting from this 426,354 tons, South Wales apparently supplied Canada with 1,188,822 long tons.

THE THINKER



—The Evening Star

Anthracite

TO SAFEGUARD anthracite dealers from embarrassment from overstocked bins at the end of the heating season, operation of the Federal relief coal plan will be modified on or about March 1, according to an announcement by L. A. Sneed, Fuel Advisor to the Federal Surplus Relief Corporation.

The new procedure, as worked out by the Washington authorities in cooperation with Scott G. Lamb, of the Anthracite Institute, Agent for the FSRC in the distribution of relief anthracite coal, permits anticipation of local relief withdrawals in order that dealers may stock replacement tonnage before the selling season is over.

At present, the Federal administration replaces coal withdrawn for relief purposes in 50 ton carload lots, which are shipped after the individual coal yard deliveries for such purposes total a carload. If, at the end of the season, a dealer had delivered less than a carload, the local administrator would reimburse him on the basis of tonnage cost and freight and the agreed delivery charges. Under this practice, as provided in the

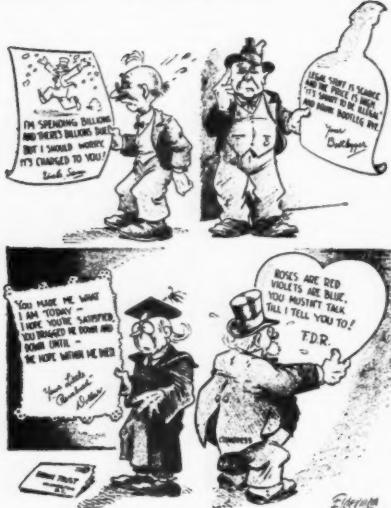
Silver

THE principal silver bill before the House Committee on Coinage, Weights and Measures is that introduced by Representative Scrugham of Nevada (H. R. 8054). The measure directs the Secretary of the Treasury to purchase silver at the rate of not less than 25,000,000 ounces of fine silver per month for six months and thereafter at the rate of not less than 10,000,000 ounces per month, until 1,000,000,000 ounces have been purchased. An exception is made that the purchase of silver shall be suspended "whenever 345 grains of pure silver shall exceed in value in world markets 23.22 grains of pure gold: Provided, that the monthly requirements of purchase shall be reduced to 4,000,000 ounces per month whenever the wholesale commodity price level shall exceed the level of January 1, 1926, as registered by the United States Bureau of Labor Statistics."

The silver is to be purchased at home or abroad upon terms and conditions deemed most advantageous by the Secretary of the Treasury to the public interest. Payment is to be made with silver certificates of deposit payable to bearer on demand in silver bullion. The bill provides a revolving fund of \$150,000,000 to facilitate the execution of the act, the amount to be returned to the general funds of the Treasury in silver certificates when no longer needed.

The silver purchased is to be held in reserve against an issue of certificates of deposit payable to bearer upon demand. These certificates are to be issued by the Treasury in an aggregate amount which shall equal the cost of the silver to the Treasury. They are to certify that there has been deposited in the

VALENTINES



—The Washington Post

Treasury so many dollars in silver payable to bearer on demand. They are to be constituted as legal tender for all debts, public and private, taxes, dues, etc.

It is provided that upon presentation the Treasury "shall redeem same by delivery of the face value thereof in silver bullion of the gold equivalent value as of the quotations arrived at by the Secretary of the Treasury from the average as of the day prior to the day of presentation. Any fractional part of an ounce of silver may be paid for in subsidiary coinage of the United States. Any certificate so redeemed shall be reissued and the silver withdrawn from the Treasury shall be replaced by additional purchases of silver so as to maintain the silver reserve provided for in this Act." The bullion is to be stored under direction of the Secretary in blocks or bricks and designated by determination of the Secretary.

In hearings before the Committee, Walter E. Trent, engineer-inventor of a machine called the "econometer" demonstrated how remonetization would aid industrial recovery. He testified that the theoretical value of silver as compared with gold is 12 to 1 on a basis of available supplies of both metals. He stated that the present Government price for newly mined silver of 64.5 cents is ineffective because it is not high enough to effect the mining of silver which is usually produced in conjunction with other metals. A good price for silver also is essential to the prosperity of China, he contended. He held that the importance of silver should be recognized as an "industrial key metal."

Iron and Steel

AN UPTURN in steel operations, due largely to better automobile demands, was the outstanding industrial development of the week. It was most important in view of the decline of the previous week and the accompanying anxiety it brought. The activity of the steel industry, it has been repeatedly

demonstrated, cannot be too strongly emphasized as the barometer of business, particularly the primary metal mining business and the coal business. It has been shown to be the fool-proof indicator of how things really are and for that reason the trends of steel operations may be trusted above all other developments, regardless of how momentous they may seem at the time. This may not always be so but it is true now and will doubtless continue so for many years. Consequently, it is pertinent to inquire into the activity trends of those industries which provide the bulk of steel operations. Foremost at present is the automobile industry. Thus far it has not lived up to its expectations for 1934 but this is reported to be due not to lack of orders but to production difficulties which are expected to be solved within a few weeks. On the basis of trade estimates, it would seem that this industry should require at least 20 percent more steel this year than last. Second in importance is construction which is depending heavily on public projects which must encounter various difficulties before they can be executed. Mr. Myron Taylor, chairman of the United States Steel Corporation, states that the return of demand for increased requirements of steel for construction uses is likely "to be less rapid" in 1934 than in the preceding year, "but with some continuing improvement." This certainly cannot be interpreted as being very optimistic in the light of the billions of dollars being spent for public works which were supposed to be the prime force in recovery. Nevertheless, it should be recognized that even \$3,300,000,000 when spread over the several years required for completion of contracts provides a relatively minor contribution to the general purchasing power. Computed on the basis of only \$1,000 a year per man, it would give jobs to about 1,000,000 men over a three-year period which doesn't cut much into unemployment when the CWA is not operating. It may be recalled in this connection that those economists who stressed public works before the various Senate committees stated that to be effective they must be applied in almost unlimited proportions, otherwise it would be comparable to priming the pump with an eye-dropper. It was contended that even \$10,000,000,000 might not be sufficient in view of the inevitable delays in getting certain kinds of projects started. As for the railroads, the only formidable business in sight is that for rails, which does not benefit the other metals. And even this, as *Iron Age* notes, "is still slow in materializing, largely because of prolonged financial negotiations at Washington." Brighter prospects, however, come from the miscellaneous users of metal, particularly electric refrigerators, farm equipment manufacturers, and specialties such as steel kegs. The refrigerator people are expecting an increase of around 30 percent in production this year and the improvement in farm prices is reflecting itself in farm tool business. Weighing all these factors, it does not seem possible that more than moderate improvement in volume can occur this year.

The Czechoslovak iron and steel industry is seeking to find means to recover its former export trade with Rumania and Yugoslavia, according to a report to the Commerce Department from its Prague office.

IT'S ALWAYS A GOOD TRICK
IF IT WORKS!



—Washington Daily News

In the period before the present depression, the report shows, Yugoslavia purchased about 25 percent of its imports of iron and rolling mill products from Czechoslovakia, while in 1932 this ratio had declined to 16 percent. In former years, Czechoslovakia exports of rolling mill products to Rumania totaled approximately 55,000 metric tons annually while in 1933 this trade had declined to 1,100 tons.

A recently published statement by an important factor in the Czechoslovak iron and steel trade pointed out that it was logical to attempt to increase exports of Czechoslovakia's iron and steel products to Rumania and Yugoslavia in exchange for their iron ores, manganese ores, bauxite, ferrosilicates and roasted pyrites.

In past years up to 150,000 metric tons of iron ores have been imported by Czechoslovakia annually from Yugoslavia while imports of manganese ores from Rumania have averaged about 18,000 metric tons a year. Imports of pyrites, in some years, have totaled 40,000 metric tons.

An increase in the trade between the three countries in this line, the report points out, could not be effected immediately as Czechoslovak iron and steel industry is still working under a long term contract with Swedish iron ore mines. However, after the expiration of this contract, Czechoslovak mills will be in a position to secure a great part of their raw materials from the other members of the Little Entente, provided they be given the opportunity to resume their exports of finished products.

Records of the Harbor Department in California recently issued show sharp increases in shipments of scrap metal, especially iron and steel, during the past six months from the ports of Long Beach and Los Angeles.

The records show that the Port of Long Beach cleared 44,000 tons of scrap iron and steel for Japanese ports during 1933 as compared with a negligible amount in 1932. For the last five months

of 1933 the Port of Los Angeles cleared 12,172 tons of scrap iron and steel for Japan as compared with 10,325 tons for the corresponding months of 1932 plus July of that year.

Molybdenum in 1933

FOR several years the bulk of the world's production of molybdenum, most of which has been used in the manufacture of molybdenum steel, has come from the large deposit at Climax, Colo. In 1931 the known ore reserves of that deposit were 85,000,000 tons, and the geology suggests that an additional large amount of unproven ore exists. It is probable that Climax will continue to supply most of the world's demand for molybdenum for many years.

The results of a study of the geology and ore of this deposit by B. S. Butler and John W. Vanderbilt, of the United States Geological Survey, have just been published by the Department of the Interior as Bulletin 846-C of the Geological Survey, which can be obtained from the Superintendent of Documents, Washington, D. C., for 50 cents. The history and production of the deposit are summarized by Charles W. Henderson, of the United States Bureau of Mines, especially for this bulletin.

Little was heretofore known of the geology, and many questions concerning the nature, extent, and probable origin of the deposit are here answered for the first time. The authors believe that hot molybdenum-bearing solutions were given off from a cooling mass of molten rock below a highly fractured cover of granite at the beginning of the Tertiary period. The molybdenum-bearing solutions deposited an enormous amount of quartz in the fractured rock, changing a great mass (shaped like an inverted cone) into nearly pure quartz. The outer part of the cone-shaped mass contains a small percentage of molybdenum and constitutes the ore now mined. Although most of the ore contains less than 1 per cent of molybdenum sulphide as mined, the final product, after crushing and concentrating, contains more than 85 per cent of the sulphide.

Antimony Industry's Request for Tariff Revision Refused

WITH the approval of President Roosevelt, Administrator for Industrial Recovery Hugh S. Johnson, dismissed the complaint of the Texas Mining and Smelting Company, of Laredo, Texas, alleging that the imports of antimony regulus or metal are being brought into the United States on such terms or under such conditions as to render ineffective or seriously to endanger the maintenance of the PRA under which the company is operating, pending approval of its code.

"On account of import of Chinese antimony in substantial quantity," the formal complaint reads, "because Chinese antimony is produced and sold by a monopoly and because a well founded domestic smelting industry is a desirable protection to industry and for national defense against the cutting off of the supply from the single predominant and far distant world source, we respectfully request

that the President cause an investigation to be made and direct that antimony metal shall be permitted entry into the United States only upon such terms and conditions and subject to such limitations in order that the entry thereof shall not render or tend to render ineffective any code or agreement applying to the antimony industry."

An examination of the complaint, according to General Johnson, shows that the facts do not warrant further investigation.

Potash in Kansas

THE United States Geological Survey has announced the discovery and identification of the potash mineral polyhalite in a sample of well cuttings from western Kansas. This is the first recognition of this mineral in that State. F. C. Calkins and R. K. Bailey, of the Geological Survey staff, found it in cuttings submitted by the Central Commercial Oil



—The Evening Star

Co. from a well in Trego County, about four miles south of Riga, from a depth of about 2,000 feet, which in that locality is approximately sea level. The polyhalite made up only about five per cent of the sample and hence has no commercial interest in itself. Nevertheless the locality is in a part of the great Permian salt basin that has not hitherto yielded definite showings of potash, the known occurrences being farther south in New Mexico and Texas. Thus this identification suggests that further exploration in Kansas might lead to the discovery of richer bodies of potash salts of possible commercial value. It should be remembered that the finding and identification of polyhalite in cuttings from an oil well in Texas was the first step leading to the development of the present potash industry in New Mexico.

Aluminum Industry in 1933

NEW aluminum produced in the United States during 1933 amounted to 85,126,000 pounds valued at \$16,174,000, compared with 104,885,000 pounds valued at \$20,453,000 in 1932. The principal producing plant was that at Massena, N. Y., where approximately 51 per cent of the metal made in the United States in 1933 was produced. Other

works are at Niagara Falls, N. Y., Alcoa, Tenn., and Badin, N. C. However, the plant at Niagara Falls was not operated in 1933.

WORLD PRODUCTION

World production of aluminum (exclusive of U. S. S. R.) in 1933 is estimated at 134,000 long tons, a decline of about 10 per cent from that of 1932 (149,000 long tons). There was a substantial reduction in production in Austria, Germany, Norway, and the United States, as shown by the accompanying table. The production in Switzerland and England, however, was about 53 and 14 percent, respectively, greater than in 1932.

WORLD PRODUCTION OF ALUMINUM, 1932-1933, BY COUNTRIES, (EXCLUSIVE OF U. S. S. R.), IN LONG TONS

Country	1932	1933*
Austria	2,000	900
Canada	17,500	15,900
England	10,000	11,400
France	14,300	14,100
Germany	18,700	13,500
Italy	13,201	11,800
Norway	17,506	14,700
Spain	1,000	1,000
Switzerland	8,000	12,200
United States	46,824	38,003
	149,000	134,000

* Preliminary and subject to revision.

Secretary Ickes Replies To Bureau of Mines Committee

(Continued from page 19)

the safe use of electricity underground, as well as the statistical work of the Bureau as now conducted, and obtaining information regarding the qualities of American mineral fuels and how best to recover and use them . . ."

The American Mining Congress announces the acceptance of the following as a national committee on the Bureau of Mines, working on recommendations concerning the Bureau's future activities: Milnor Roberts, Head of Mine Dept., University of Washington, Seattle, Wash.; Robt. M. Betts, pres. and mgr., Quicksilver Syndicate and Cornucopia Mines Co., Blackbutte, Ore.; Walter W. Bradley, Division of Mines, Ferry Bldg., San Francisco, Cal.; Eugene McAuliffe, pres., Union Pacific Coal Co., 1416 Dodge St., Omaha, Neb.; Robt. S. Palmer, secy., Colo. Metal Mng. Fund, State Office Bldg., Denver, Colo.; Wm. Koerner, Magna Copper Co., Superior, Ariz.; M. D. Harbaugh, secy., Tri-State Zinc and Lead Ore Producers Assn., Miami, Okla.; T. J. Thomas, pres., Valier Coal Co., 547 W. Jackson Blvd., Chicago, Ill.; H. E. Nold, professor of Mine Engineering, Ohio State University, Lord Hall, Columbus, Ohio; Milton H. Fies, vice-pres., DeBardeleben Coal Corp., Southern Railway Bldg., Birmingham, Ala.; E. A. Holbrook, Dean, School of Mines, University of Pittsburgh, Pittsburgh, Pa.; Dr. J. J. Rutledge, chief mining engineer, Maryland Bureau of Mines, Baltimore, Md.; Lee Long, vice-pres., Clinchfield Coal Corp., Dante, Va.; Chas. E. Lawall, director, School of Mines, W. Va. Univ., 12 Mechanical Hall, Morgantown, W. Va.

Report of National Labor Board

SENATOR ROBERT F. WAGNER has submitted to the President a statistical report summarizing the work of the National Labor Board system from its inception to February 1. The report reads:

To the President,

"I have the honor to submit a statistical summary of the work of the National Labor Board and of 17 of its 18 Regional Labor Boards.

"Disputes involving 914,000 workers have been before the Boards, or a total of 1,818 cases, to February 1, of which 69 per cent were settled. Altogether about 650,000 workers have been put back to work or kept at work, or had their less acute disputes adjusted.

"Included in this total are 599 strikes, of which we have settled 80 per cent, besides averting 197 more strikes,—a total of 482,500 returned to work or kept at work in strike situations.

"Cases pending are 322, or 18 per cent, involving 164,000. About 100,000 workers (or a flat average of 5,500 to a Board) come under cases, largely of strikes which dragged on, where no definite solution could be enforced, or of disputes where some adjustment resulted whose terms were not reported to the Boards.

"There is a marginal area of settlements through the influence of the mere existence of the Boards. Disputants have settled up because it was realized there was a tribunal to which the matter would ultimately have to go.

"One-half (636) of the settlements have been by agreement, and most agreements promise durable peace.

"The Boards have supervised 97 industrial elections and have had 70 cases jointly submitted for arbitration. The recent increase in arbitration cases speaks confidence in the Boards.

"Altogether the record is a testimonial to the public spirit of the Boards' 250 members,—all of them busy people, prominent in the affairs of their communities, whose services on the Boards are voluntary.

"Considered against the background of the disturbed economic conditions when the National Labor Board (August 5) and the Regional Labor Boards (October) began their work, and with the question in mind as to what might have happened had the country lacked this system of mediation and arbitration, the work has won the praise of many commentators. What this record actually reflects is the cooperative attitude and desire for industrial peace of the great majority of employers and employees, who have followed the Board's methods in the adjustment of complicated and contentious affairs. This support of the majority is very reassuring and indicates that the general principles of the Boards are soundly based.

"The record has a disquieting aspect. Its percentage of settlements is too low, and some settlements have been unsatisfactory. The statistics bear out what the Boards in many regions have been reporting for some time; namely, that the willingness to use the Boards, displayed by the majority, is encountering the impediment of a small minority whose desire for industrial peace is not uppermost.

"This impediment is increasing. Certain industrialists' effort to challenge the Board's authority is symptomatic. Far

LINCOLN'S BIRTHDAY



—The Washington Post

more significant is the fact that three-quarters of all the disputes involve complaints of denial of the rights of self-organization and collective bargaining contained in Section 7-a of the Recovery Act.

"Clearer understanding and recognition of these rights and of the National Labor Board's authority seem to be the requirements of the present situation as indicated by our six months' experience."

MOVEDING promptly to comply with the Senate resolution directing an investigation into steel and gasoline prices, the Federal Trade Commission has already begun its inquiry. The steel price investigation will be under the direction of Judge Robert E. Healy, the Federal Trade Commission's Chief Counsel, who conducted the public utility investigation, and the gasoline price inquiry under the direction of the Commission's Chief Examiner, James A. Horton. The Senate resolution, introduced by Senator Borah, of Idaho, and passed unanimously February 2, directs an investigation and report showing, "First: The practice of the steel industry under the code with reference to the price fixed, the increase of price of steel products and such other matters as would give a full presentation of facts touching the industry since it went under the NRA code; Second: Increase in the price of gasoline during the last six months and what the increase means to the users of gasoline throughout the country in the way of additional costs."

World's Highest Mining Award Goes to Yeatman

Pope Yeatman, consulting engineer of New York, today holds the William Lawrence Saunders gold medal, the mining world's highest award.

The medal was presented at the annual dinner of the American Institute of Mining and Metallurgical Engineers.

THE Federal Trade Commission has announced issuance of a formal complaint charging the American Smelting & Refining Co., of New York, with violation of Section 7 of the Clayton Act in acquiring the capital stock of Federated Metals Corporation, New York, a New Jersey corporation alleged to be a competing concern.

This acquisition resulted from a reorganization agreement of September 30, 1932, between the two companies in which a new company bearing the name of Federated Metals Corporation, of Delaware, was formed, the Commission charged. American Smelting & Refining Co. acquired all capital stock of the new company by exchanging therefore its own \$3,500,000 par value first mortgage 30-year gold bonds and approximately \$2,129,555 worth of warehouse certificates representing copper, lead and spelter (zinc) in marketable form, according to the complaint. The original Federated Metals Corporation then transferred to the new company all its business, assets and good will, the Commission explains. As a result of the two exchanges, the new company is said to be controlled by American Smelting.

Acquisition by American Smelting & Refining Co. of the new company's capital stock, or share capital, is alleged by the Commission to cause a substantial lessening of competition in interstate and foreign commerce between American Smelting & Refining Co., and the Federated Metals Corporation, of Delaware, and its predecessor, Federated Metals Corporation, of New Jersey, in the sale and distribution of non-ferrous metals, by-products and mixed metals, including copper, lead spelter, zinc dust, lead and tin pipe, and tends to create a monopoly in American Smelting & Refining Co. The original Federated Metals Corporation, of New Jersey, owned the Great Western Smelting & Refining Co., Chicago; Duquesne Reduction Co., Pittsburgh; Union Smelting & Refining Co.; Trenton Smelting & Refining Co., and Eagle Smelting & Refining Works at the time of the acquisition. American Smelting & Refining Co. owns smelters and refining plants in Baltimore, Denver, Omaha, San Francisco, El Paso, Maurer, N. J.; Alton, Ill.; Reading, Pa.; East Helena, Mont.; Garfield, Utah; Sand Spring, Okla.; Hayden, Ariz.; Leadville, Colo.; Durango, Colo.; Murray, Utah; Amarillo, Texas, and Tacoma, Wash. The company also has producing interests in Mexico, Peru, Newfoundland, British Columbia.

The Thirty-Hour Week

(Continued from page 35)

operation. Capital without labor is helpless. In its own field, labor is supreme. Under Section 3 of the Connally Bill it is proposed to give it a practical veto power over the policies and plans of the employer. Labor and capital are essential to each other. Capital can not succeed without labor and the present great depression has proven most conclusively that labor cannot get along without capital. Neither can get its best result without management. Management to be successful must have executive authority. In these days of unusual executive authority in governmental affairs, it would seem very unwise to so restrict management in its power to so direct labor as to accomplish the best results for all concerned."

The Present Gold Situation

(Continued from page 13)

years, our gold flows out, and steps are taken to offset this movement, and to maintain a volume of credit unaltered, then the tendency for gold to move out remains unaltered also. However the belief prevails that whenever the movement of gold is against us, that the volume of spending money within the country should not be allowed to contract, it is the first essential of a state of successful functioning that the loss of gold should not be offset by the manufacture of paper money or bank credit. The gold standard cannot be run on inflation as a principal, but must be allowed to operate on the price structure. We cannot enjoy the advantages of a world gold standard, and an inflated currency standard at the same time. We must either work for gold, or we must resign ourselves to doing entirely without it. I am certain that for many years to come the maintenance of any standard, be it gold or otherwise, must involve the most difficult problems of management and adjustment. And the claim for a gold standard is that it must operate in the present world of central banking interests and political tensions. It involves no dangers or difficulties, but rather the difficulties to which it is exposed, and the difficulties which arise if given reasonable prudence on the part of those who manage the same, will be much less dangerous and difficult than those which exist under any other system of international exchange.

In the United States we have witnessed for the last four years our vanishing gold reserve, and strange to say, that the same men who today are talking for sound money were equally loud in their argument that when gold was flowing at a rapid rate from the United States to the principal nations of Europe, that this was an ideal situation, in that it distributed our gold supply to other nations of the world. And as today, they didn't realize at the time that a golden age was past. That as gold left the United States, the price of this metal was constantly being bid to a higher price. This was immediately reflected in lower prices of commodities. In other words, the nations of the world were willing to give a larger amount of commodities for a smaller unit of gold.

Our political economists term these transactions as deflation or the lowering of prices. Would it not be more proper to say that it *increased the value of gold as compared to other commodities*, and thus reduced the price of land, chattels, and commodities. To what extent the value of gold was raised is a matter of debate. However, it has been estimated by the most careful observers that the

price of gold increased at least to double its value, and in some commodities to as much as four times its former value. It has brought about a serious maladjustment between debtor and creditor, as we have witnessed during the past four years. Conservative men who borrowed money on a conservative basis have been made destitute through their inability to repay in gold which has risen so far in value. Thus two or three times the amount of commodities were necessary to purchase the same amount of gold as heretofore, and this has inured greatly to the benefit of the creditor until there was almost a universal cry of inflation, or in other words the raising of commodity prices. And we are now engaged in a great experiment to raise commodity prices by diminishing the grains of gold contained in the dollar, or in other words paying a greater amount of money for an ounce of gold. I believe that if this experiment can be given the reasonable amount of time to enable a proper readjustment, that we will see an increase in the price structure which should restore the relationship of a debtor and creditor to a more equal status. In the last few days we have read the various statements made by the nation's leaders for and against this plan. Naturally the creditor who is in the favored position does not wish to recede, but like the story in the "Merchant of Venice," there are thousands of Shylocks who would have their pound of flesh even though it ruined a nation. Then again, there are those of the debtors who would inflate or issue currency in an irredeemable form, so as to assist the debtors, and this in turn would plunge the nation into despair. It therefore seems to me that the middle course is the proper one to pursue. We should use our best endeavors to stabilize the dollar on a gold basis, at such value as would establish a fair relationship between the debtor and creditor.

Gold mining during the past decade has not received any impetus through the lack of profits. The costs of producing gold were high. Its value fixed at \$20.67 per ounce, can fairly be stated did not represent the true cost of production plus a reasonable speculative profit. Therefore only the highest grade gold mines could be put into operation, and either from these mines, or gold as a bi-product from the smelters, we were not producing gold in sufficient volume to maintain its equilibrium with the balance of business. And as I have stated before, the cost of production being more than the monetary value of gold, capitalists and gold seekers found outlet for their energies in other directions. If, however, gold can be stabilized at a price which would enable the miner to secure the necessary capital, and have the assurance of the stability at an increased price per ounce, we would without a doubt see a great deal of new work pushed forward rapidly to reopen our mines. Our country is a veritable storehouse for this precious metal. The United States Geological Survey has estimated that in California alone no more than 10 percent of the gold has been mined. And assuming that approximately \$2,000,000,000 has been produced, this would show a potential wealth of \$18,000,000,000 which could be recovered and used for the benefit of mankind. Personally, I am of the

opinion that we should not permit ourselves to be carried away with the idea that our country is going into chaos. We should reestablish our faith in its destiny, and as the Argonauts of '49 we should encourage the production of this precious metal which brings stability and prosperity to the nation. We should see that gold mining is given a fair chance to recover; that all unnecessary restrictions be removed, and that the Argonauts of '33 be given an opportunity to show the world that the West again can assist in saving the nation as it did in Civil War days—by producing GOLD!

NRA Developments

ADMINISTRATION members of code authorities created under approved codes have been announced by General Johnson and include several branches in the mining industry.

The Administration members are appointed for terms of from six months to one year and their terms, in cases where more than one is named, are arranged so they do not expire simultaneously. At least one of the members is to have a background of experience but no present interest in the industry or in an allied industry. They will function as "co-workers in an undertaking of public interest, carefully avoiding the fact or appearance of dictation or coercion."

Specifically, their chief duties will be as follows:

1. Refer with recommendation to the Administrator through the division administrator those matters mentioned in the code as being subject to review and/or approval of the Administrator.
 2. Recommend to the division administrator such other matters as in his judgment are important to the welfare of the industry, or to the public interest, or to the consumers or employees affected by the provisions of the code.
 3. Secure through the code authority complete assent to and compliance with all provisions of the code by each unit of the industry.
 4. Assist the code authority in the preparation of recommendations for necessary interpretations, modifications and additions to the code and consult with the division administrator in reference thereto.
 5. Warn and guard against threatened deviations from the code or non-observance of its terms or action contrary to the principles of the Recovery Act.
 6. Constantly scrutinize the operation of the code and see that it does not permit or promote monopolies nor tend to eliminate or oppress small enterprises.
 7. Advise with the code authority in seeing that its affairs are handled in a cooperative and fair manner with respect to all units under the code, making sure that the provisions of the code are strictly adhered to with an equitable and fair settlement of all matters covered by the code pertaining to the interests of the general public, consumers, or employees.
 8. Assure himself and the division administrator that the industrial members of the code authority are truly representative of the entire industry and elected by a method fair and equitable to all concerned.

HAVE YOU HEARD—?

DONALD RICHBURG, following a conference at the White House, between the President and Floyd Carlyle, representing the Electric Light and Power Industry, said: "The President has given special consideration to the Electric Industry Code because of its relation to the activities of the various Federal agencies engaged in regulating, or financing or operating enterprises in this country" . . . It should be remembered that the Government is "investigating" the power industry; is proposing to "regulate" it; and is "operating" power plants in competition, notably through T. V. A.

MORE than twenty leading economists and marketing experts have been invited to assist the Administration in its study of open price associations, which is being conducted by Administrator A. D. Whiteside and Col. R. H. Montgomery, chief of the Research and Planning Division.

WAGE increases have been announced by all of the leading tire and rubber manufacturers, including Goodyear, Firestone, General Tire, Goodrich and Seiberling. It is estimated that more than 40,000 workers are involved.

STRONG opposition is being developed to the bill proposed to regulate the Stock Exchange. Congressmen are hearing from the "home folks" who are apparently involved through employment by companies listed upon the Exchange. Hearings on the bill are expected to extend far beyond the scheduled two weeks.

THE ADMINISTRATION through Governor Black, of the Federal Reserve Board, has asked Congress to extend for another two years the provisions of the Glass-Steagall bill, which otherwise will expire March 3, 1934. The bill provides for the use of Federal Government obligations as collateral for issue of Federal Reserve notes.

THE SILVER COMMITTEE of 100 is actively behind the silver program. Secretary of the Treasury Morgenthau has assured them that silver "rehabilitation" is on the program. In spite of all the pressure outside and inside the Administration it is not anticipated that action in regard to Silver will be taken before April 1, which is the deadline for ratification by the nation's signatory to the London Agreement.

LONG RANGE PLANNING is said to offer a way out for the Administration in the much criticized CWA and PWA enterprises. The White House has announced a long-range planning project involving definite planning of waterways projects over a long period . . . commentators believe this the opening wedge in an extensive social and economic betterment scheme. It is planned to divide the country into watershed divisions; a list of projects in the order of importance, would be mapped out, and a carefully regulated program of improvement of rivers and harbors would be evolved. Decentralization of industry is said to be a part of the plan.

PRESIDENT ROOSEVELT has issued orders that investigation be widened into all fields where "go-betweens" may be found, as a part of his continued war on "lobbies."

THE PRICE FIXING provision in the retail coal code has met the approval of the President, and given a 90-day trial, after which it may be modified if found unsatisfactory.

GENERAL HUGH S. JOHNSON appearing before the House Labor Committee in relation to the Connery 30-Hour Industry week, urged that the matter be left to the NRA and enforced through codes. He stated that an arbitrary 30-hour week would cause immediate "industrial somersaults." The General is said to lean toward the adoption of the 32-hour week, wherever possible in industry, but he insists that the policy must be flexible, not arbitrary.

SPECIAL COMMITTEE of The American Mining Congress, studying the Bureau of Mines, recommends (1) simplification of administrative activities of the Bureau; (2) extension of safety activities; (3) maintenance of present statistical set-up; (4) curtailment and concentration of experimental stations; (5) carrying on of research work which industry is not equipped to do; (6) allocation of Public Works funds to carry on work to June 30, 1935. Eugene McAuliffe, President, Union Pacific Coal Company is Chairman of the Committee, and is supported by a group representing every mineral producing district.

ANTHRACITE AND COPPER industries have submitted revised codes to NRA. Copper hearing February 27, and Anthracite "at earliest possible date."

AMERICAN MINING CONGRESS, through James F. Callbreath, its secretary, vigorously opposes the Connery bill providing for compulsory adoption of the 30-hour week by industry. Mr. Callbreath in appearing before the House Labor Committee presented the viewpoint of the mining industries in relation to this bill, and urged that the matter of working hours be left to the NRA, pointing out that a compulsory, universal change in working hours would demoralize the mining industries, and definitely retard progress toward recovery.

COPPER CODE would permit regulation of copper production, by voluntary agreements by members of the industry, and the withholding of surplus stocks from the market. It would permit allotment of volume of current production and provide a minimum sales price plan.

A CONFERENCE of State labor officials from 44 States was held February 14, for the purpose of determining what should constitute an acceptable State labor code; another conference is to be held which will represent employers.

IT IS PREDICTED that out of the code authority meeting scheduled for March 5, that a "new over-all organization of trade and industry," or a "super-trade association" will be formed. At least one Washington agency is said to aspire to the job.

A PLANNING BOARD has been proposed for natural resources industries, including oil, bituminous and anthracite coal, natural gas, and water power.

ALMOST 13 billion dollars will have been spent by the Federal Government for the sole purpose of accelerating the wheels of business and breaking the depression when the five years stretching between 1931 and 1935 close. In other words in each minute of every day and night of the five years in that half decade, the Government will have spent \$4,900—almost \$5,000 a minute—trying to rebuild the economic activity crushed by the depression.

IT IS UNDERSTOOD that the Treasury Department is considering a plan which will provide for the addition of silver to the monetary system.

MORE THAN 300 suggestions for topics to be discussed at the annual meeting of its Coal Division, have been received by the American Mining Congress. Topics range from "efficient power distribution underground" to "application of the Codes of Fair Competition to Practical Operating Problems." A national committee of more than 100 operators is developing the program.

PERSONALS



M. D. Harbaugh

M. D. HARBAUGH, secretary, Tri-State Zinc and Lead Ore Producers Association, Miami, Oklahoma, is in Washington on matters relating to the Zinc Code.

A. B. JESSUP, vice president, Jedd-Highland Coal Company, has been a frequent Washington visitor, in matters relating to the Anthracite Code.

EUGENE McAULIFFE, president, Union Pacific Coal Company, attended the annual meeting of the American Institute of Mining and Metallurgical Engineers, stopping enroute in Washington, to confer with officials of the American Mining Congress upon the work

of its Committee on the Bureau of Mines of which he is chairman.

JULIAN D. CONOVER, secretary, The American Zinc Institute was a Washington visitor during the week of March 1.

C. LORIMER COLBURN, formerly secretary of the Colorado Metal Fund, and the Colorado Chapter, The American Mining Congress, now interested in developing several gold properties in Colorado, was a Washington visitor during the month, where he renewed acquaintance with the staff of the Bureau of Mines, with which he was at one time associated.

J. B. WARRINER, president, Lehigh Navigation Coal Company, was recently in Washington on Code matters.

C. F. HUBER, chairman, Glen Alden Coal Company, attended a meeting of the Anthracite group and government officials, in Washington March 5.

C. P. DANIELS, Enterprise Wheel & Car Corp., was in Washington during the month.

VICTOR RAKOWSKY, of Joplin, Missouri, was a Washington visitor in February.

E. A. WILLIFORD, National Carbon Company, Cleveland, Ohio, conferred with government officials in February on matters relating to his company.

HORACE ALBRIGHT, vice president and general manager of the U. S. Potash Company, was in Washington recently.

EMIL RICHTER, treasurer, Howe Sound Company, was in Washington on February 28, in relation to matters pending before the government departments.

MR. H. E. SEARLE, development and research department, The International Nickel Company, Inc., will be the guest speaker at the March 12 meeting of the North Jersey Section of the American Chemical Society.

C. M. LINGLE, Vice President, Buckeye Coal Company, Nemacolin, Pa., has accepted the Chairmanship of the Program Committee for the Eleventh Annual Convention, Practical Coal Operating Men, to be held under the auspices of the Coal Division, The American Mining Congress, at Cincinnati, Ohio, May 7-11, 1934.

ARCHIBALD DOUGLAS, of the law firm of Douglas, Armitage & McCann, recently sailed for France for a short vacation.

LUCIEN EATON, consulting engineer, and national chairman, Metals Section, Standards Group, The American Mining Congress, attended the annual meeting of the American Institute of Mining and Metallurgical Engineers, and the annual meeting of the Correlating Committee of the American Standards Association.

SIDNEY NORMAN, well-known mining writer, has been appointed mining editor of the *Vancouver Sun*.

DR. AND MRS. L. E. YOUNG, Pittsburgh Coal Company, attended the annual meeting of the American Institute of Mining and Metallurgical Engineers.

JOHN T. RYAN, Vice President, Mines Safety Appliances Company, is in Florida for a short rest and vacation.

CHARLES HAMILTON, President, Binkley Coal Company, represented the Illinois-Indiana operators at the first meeting of the Program Committee for the Eleventh Annual Coal Convention of The American Mining Congress.



Dr. L. E. Young

MR. F. B. COYLE, metallurgist, The International Nickel Company, Inc., addressed the Springfield, Mass., section of the American Society for Metals on February 26 on the subject of American Progress in the use of Alloys in Cast Iron.

THOMAS D. DARLINGTON, director of News Bureau, Hercules Powder Company, Wilmington, Del., resigned from that position, effective February 6. Darlington, who was graduated from Stanford University in 1925, expects to devote considerable time to the study of international problems pertaining to the Pacific area.

DONALD RENSHAW and PRENTISS M. TERRY have been appointed Special Assistants to Administrator Hugh Johnson for field coordination. As the Administrator's representatives they will travel to the 53 field offices, which are under the supervision of the State Directors of the National Emergency Council, in order to establish a closer and more personal contact with the field agencies.

NEWS OF MANUFACTURERS

DESIGNED especially to achieve greater savings in air compressor costs, a new line of vertical compressors has just been announced by the Gardner-Denver Company. According to these officials, the new verticals surpass the cost saving records of previous Gardner-Denver models, meeting today's need for maximum air compressor economy.

The new verticals are priced 25 percent lower. Installation cost is given as two-thirds lower, and maintenance costs from 25 percent to 50 percent less. In addition, the new verticals make possible a valuable saving in floor space.

A JOINT meeting of operating and technical servicemen from plants and offices of the Hercules Powder Company was held during the week of February 4. After first meeting in New York, the group inspected the Hercules dynamite and smokeless powder plant at Kenil, N. J.

This interchange of ideas and methods used to meet blasting problems has proved extremely worthwhile. With different blasting problems encountered in different regions of the country, each man is a specialist in several phases of blasting and can therefore help other servicemen.

INGERSOLL-RAND COMPANY has acquired the turbo-blower business of General Electric Company and will consolidate it with its own Turbo-Blower Department. This acquisition places Ingersoll-Rand in position to meet demands for blowers and centrifugal type compressors for the broadest possible variety of uses.

Ingersoll-Rand is a long-established manufacturer of blowers of medium and large capacities, for pressures ranging up to 100 lbs. General Electric has specialized in both single and multi-stage units for a variety of services in low and medium pressures. Ingersoll-Rand also secures an exclusive license under the various General Electric patents.

WITH more than seventy in attendance, the 17th Annual Convention of the Technical Section, Explosives De-

partment, E. I. du Pont de Nemours & Company, was held at Wilmington, Del., February 13, 14 and 15. Arthur La Motte, manager of the section presided. The convention was addressed by Mr. La Motte; J. W. McCoy, general manager, Explosives Department; and W. H. Ward, director of sales. The discussions covered nearly 200 topics relating to types of explosives and their uses, blasting accessories and other subjects bearing on mining, quarrying, highway and other construction, and agricultural uses of explosives. Those in attendance included technical field men from all parts of the country, explosives salesmen, explosives chemists, plant managers, executives of the Explosives department and the staff of the home office of the technical section. Canadian Industries, Limited, Montreal, Canada, was also represented.

IN ORDER to better serve the operators of the Virginia and Southern West Virginia coal fields, the Jeffrey Manufacturing Company has opened a service station and warehouse at 193 City Avenue, Beckley, W. Va.

ROBINS CONVEYING BELT COMPANY, manufacturers of Material Handling Equipment, with General Offices in New York, announce their new Super Manga Iron Bulletin No. 87, describing a recently developed alloy cast iron which is said to show remarkable results in applications where abrasion-resisting is the most necessary quality.

A NEW cutting machine, known as the Oxwell Straight-Line Cutting Machine, has been added to the Oxwell line of welding and cutting apparatus by The Linde Air Products Company, 30 East 42nd Street, New York. This machine consists essentially of a steel channel supporting base, a means for moving the blowpipe, and adjustments for setting the blowpipe to cut bevels. Motion in two directions is possible: 45 in. longitudinally and 7½ in. laterally. The machine can be furnished either with two traverse hand-wheels for hand operation, or with one hand-wheel and a 110-

115-volt universal motor, either of which can be used by simply throwing a lever.

For the shop requiring a cutting machine for trimming or beveling plate, this machine is ideal. Clean, finished cuts are made with greater accuracy and greater speed than can be made by hand; and in shops where straight-line cutting is a regular operation, the time and waste saved by a machine like this soon pays for it many times over.

Another new cutting machine has been announced by The Linde Air Products Company as an addition to its Oxwell line of apparatus, known as the Oxwell Pipe-Cutting and Beveling Machine. It consists of a center rod with three spreading arms which press against the inner wall of the pipe, holding it in position, with an arm supporting a blowpipe that can be adjusted to the desired angle of the cut. The blowpipe and arm rotate without the use of a crank for quick centering of the device, and by means of a crank when doing actual cutting.

This machine will take almost any hand-cutting blowpipe, is readily portable, and its operation is extremely simple. Once centered in the pipe, the operator merely turns the crank causing the blowpipe to rotate evenly around the pipe, making a clean machine-like cut. Wherever large quantities of pipe are to be cut and beveled, this machine will save time, money and trouble.

FIFTY-SEVEN leading manufacturers of mining equipment have contracted for two-thirds of all of the space available at the National Exposition, to be held in conjunction with the Operators Convention, of the Coal Division, The American Mining Congress. This establishes a record for 90 days before the opening of the convention. Total number of exhibitors usually participating in the exposition range from 97 (lowest) to 127, (highest). Jeffrey Manufacturing Company gets the spot light by applying for 2,000 square feet of space.

ROBINSON
VENTILATING COMPANY

Fans and Blowers
Ventilating Engineering Service

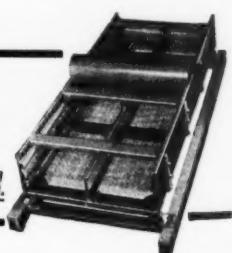
ZELIENOPLE
PENNSYLVANIA

UNIVERSAL VIBRATING SCREENS

Popular the World Over—Highest in Efficiency. Lowest in Cost. Write for Catalog

UNIVERSAL VIBRATING SCREEN CO.

RACINE - WISCONSIN



Platinum in 1933

WORLD CONSUMPTION of platinum metals during 1933 can be conservatively estimated at 175,000 ounces, compared with approximately 75,000 ounces in 1932. Reflecting the accelerated activity of business generally, this concurrent movement of the metal reaffirms the importance of platinum to industry, and for that matter, through the production of nitrates from the air, to the farm.

Stocks of platinum which had accumulated during the depression years have presumably been reduced, but an accurate balance of the situation cannot be made at this time. Data on the Russian situation are unavailable. An interesting development was the report from Moscow that the Soviet Government was considering the adoption of a platinum coinage for the use of foreigners during their stay in Russia. This report was commented on in the European press, but it has remained unofficial so far.

Palladium has been an important factor in this renewed activity in the platinum field. The electrical industry has used it to replace gold in medium duty contacts, and in dentistry the white color of the platinum metal alloys has stimulated the replacement of gold by palladium. As the natural white gold, this platinum metal is winning increased acceptance for rings, watch cases and other fabricated jewelry.

ALBERT L. DEANE has presented a "Plan for Permanent National Prosperity" which he claims will (1) create job insurance; (2) automatically end the downward employment trend; (3) eliminate the evils of operation by individuals, board or commissions; (4) adjust effects of technological advance; (5) place the least possible compulsion on employees and employers . . . leave bargaining power of both groups unimpaired . . . keep workers employed and production at high level . . . maintain labor's buying power at high level; (6) eliminate unemployment, the need for charity and doles; (7) automatically raise consuming power; (8) work to the economic advantage of every element in the community. Mr. Deane is with the General Motors Corporation, but the plan is advanced by him as an individual, not as a corporation executive. He recently presented it in full to the House Committee on Labor, considering the 30-hour week in industry.

FREIGHT CAR loadings for the week ended February 10, increased by 8,406 over the preceding week, and 67,841 cars over the same week in 1933.

REPRESENTATIVES of 44 State Governors held a conference with Secretary of Labor Perkins, and recommended permanent continuance of NRA codes. General H. S. Johnson has submitted a "Model State Recovery Law" to the various Governors.

JAMES H. PIERCE & COMPANY ENGINEERS AND MINE MANAGERS

A successful background in the practical solution of difficult engineering and managerial problems.

Reports—Valuations—Appraisals—Cost Analysis
Scranton Electric Building, Scranton, Pa.
Whitehall Building, New York, N. Y.

MARSHALL HANEY
Consulting Mining Engineer
Examinations, Exploration, Development
Financial Negotiations
Geer, Virginia

M. C. LAKE
Consulting Geologist and Mining Engineer
Appraisals, Examinations, Explorations
1300 Leader Bldg., Cleveland, Ohio
909 Fidelity Bldg., Duluth, Minn.

PETER F. LOFTUS

Consulting Engineers

ENGINEERING AND ECONOMIC SURVEYS, ANALYSES AND REPORTS ON POWER APPLICATIONS AND POWER COST PROBLEMS OF THE COAL MINING INDUSTRY

Oliver Building Pittsburgh, Pa.



We Look Into the Earth
By using Diamond Core Drills.
We prospect Coal and Mineral
Lands in any part of North or
South America.

Pennsylvania Drilling Co.
Pittsburgh, Pa.
Drilling Contractors

DIAMOND CORE DRILLING CONTRACTORS

We make Borings for Coal, Clays and all Minerals.
Up-to-date Equipment. Gasoline, Steam and Electric
Outfits. Ask us for estimates.

MOTT CORE DRILLING COMPANY
HUNTINGTON, W. VA.

O. C. Hoffman, Pres. Established 1902 L. H. Hoffman, Treas.
HOFFMAN-BROS-DRILLING-CO.
—CONTRACTORS—
DIAMOND CORE DRILLING
PUNXSUTAWNEY, PA.
Our specialty—Testing bituminous coal lands
Satisfactory cores guaranteed

CORE DRILLING

Oldest core drilling contractors in the world. Over 50 years world wide experience. Modern equipment. Ample rigs for any size job—anywhere. Unusually high percentage of core recovery and accuracy of records. Expert service with speed at low cost.
SULLIVAN MACHINERY COMPANY
Offices in All Principal Cities

400 N. Michigan Avenue, Chicago, Ill., U.S.A.

SULLIVAN

AMERICAN BRATTICE CLOTH COMPANY

Warsaw, Ind.

Manufacturers

"MINE-VENT" Flexible Ventilation Tubing—(patented)
"ABC" Non-inflammable Jute and Cotton Duck Brattice
Cloth—6 grades.

When Rush Hour Rules

NO tyrant was ever more exacting in his demands than the rush-hour in either transportation or industry.

Severity of service reaches its peak on motors and generating equipment alike.

Brushes of proved quality are required to carry-on without costly interruptions.

NATIONAL PYRAMID BRUSHES



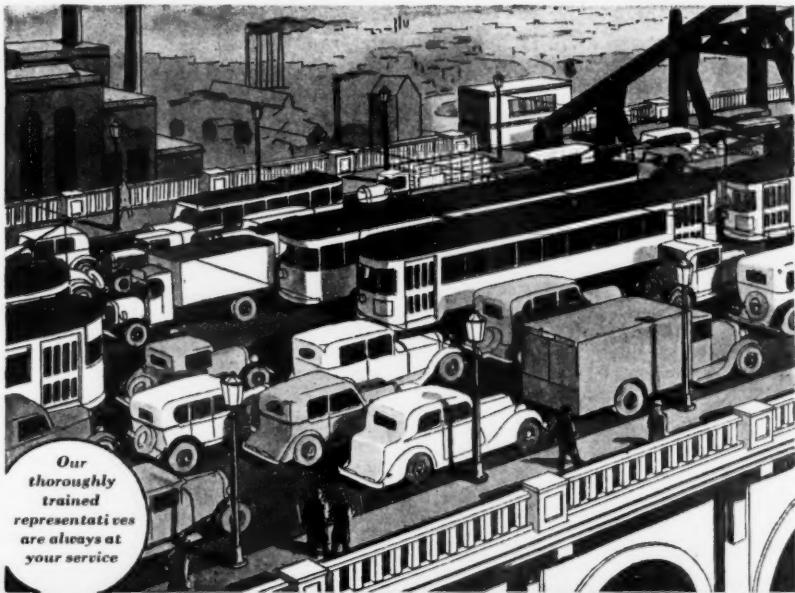
NATIONAL CARBON COMPANY, INC.

Carbon Sales Division, Cleveland, Ohio

Unit of Union Carbide and Carbon Corporation

Branch Sales Offices:

New York Pittsburgh Chicago San Francisco



NATIONAL PYRAMID BRUSHES

meet these exacting demands and keep the wheels of industry turning . . .

ADVERTISING INDEX

Allis-Chalmers Mfg. Co.....	Back Cover	Mott Core Drilling Co.....	45
American Brattice Cloth Co.....	45	National Carbon Co.....	46
Haney, Marshall	45	Pennsylvania Drilling Co.....	45
Hoffman Bros. Drilling Co.....	45	Pierce & Co., Jas. H.....	45
Lake, M. C.....	45	Robinson Ventilating Co.....	44
Link-Belt Company.....	3	Roebling's Sons Co., John A.....	5
Loftus, Peter F.....	45	Sullivan Machinery Co.....	45
Martin-Decker Corp.....	46	Universal Vibrating Screen Co.....	44



CABLE LOADS ARE MONEY LOADS—

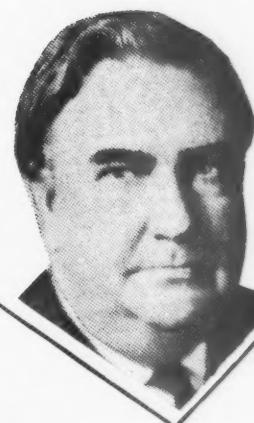
—money saved when they are right,
money wasted when they are wrong.

You can check the load on any line on the job with a Martin-Decker, Shunt Type Tension Indicator, quickly and accurately, without dead-ending or cutting.

Two sizes—for cables $\frac{1}{4}$ " to $2\frac{3}{8}$ " in diameter; loads up to 260,000 pounds.

Write for descriptive literature.

MARTIN-DECKER CORPORATION
3431 Cherry Avenue, Box 249, Long Beach, California, U. S. A.



SENATOR M. M. LOGAN

*Chairman of the Committee
on Mines and Mining—*

A message to the mining industry of the United States by Senator M. M. Logan, Chairman of the Mining Committee of the U. S. Senate, presented to the American Mining Congress Convention, Washington, D. C., December, 1933.

"One thing that I request of you is that you keep yourselves informed as to legislation affecting your business that is pending in the Congress of the United States and that you advise me about it so I will know what it is and can consider it intelligently.

"It is your duty to submit briefs, to submit arguments, to submit facts, that can be used in arriving at a conclusion.

"If you come before my committee prepared to submit reasons to support your views, I can assure you that you will always receive consideration.

"We should strive diligently for such action as will rehabilitate your business and as long as you are heading in that direction I will be your servant and you may command me."

—From the Mining Congress Journal,
January, 1934.

"it's up to YOU"

The American Mining Congress represents the greatest source of reliable, authentic information regarding mining legislation, taxation, modern mining practice and methods, through its many Divisions, backed by years of training and experience.

Annual dues are \$10. This membership includes a subscription to the Mining Congress Journal, and entitles you to the weekly, monthly and "special" bulletin services of the organization. Nowhere can you get this information so economically.

Send in your application for membership now.

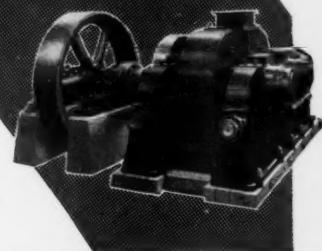
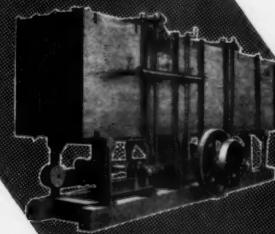
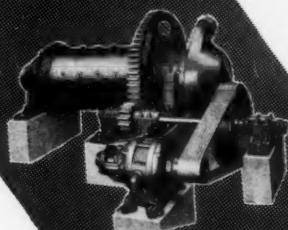


The American Mining Congress

Munsey Building

Washington, D. C.

Allis-Chalmers Equipment *for the* Metal Mining In- dustry



With its complete engineering and manufacturing organization Allis-Chalmers is in an unrivaled position to meet the requirements of the metal mining industry.

Allis-Chalmers machinery has a part in every operation from the time the ore is mined until the pure metal is discharged from the casting machine. Allis-Chalmers crushers, jaw and gyratory, reduce the ore to a size small enough to go through the rolls, from the rolls it is sent to rod, tube or ball mills for fine grinding.

In addition to crushing, grinding and screening equipment, Allis-Chalmers also supplies hoists, underground power shovels, perforated metal classifiers, jigs, feeders, smelting machinery, casting machines, pumps, motors, Texrope Drives—in fact all the principal equipment needed for a complete crushing, grinding and smelting plant.

In view of the experience of the Allis-Chalmers engineering organization and unsurpassed manufacturing facilities no order can, of course be too large or too complex for careful efficient handling.

ALLIS-CHALMERS

Allis-Chalmers Manufacturing Company, Milwaukee

